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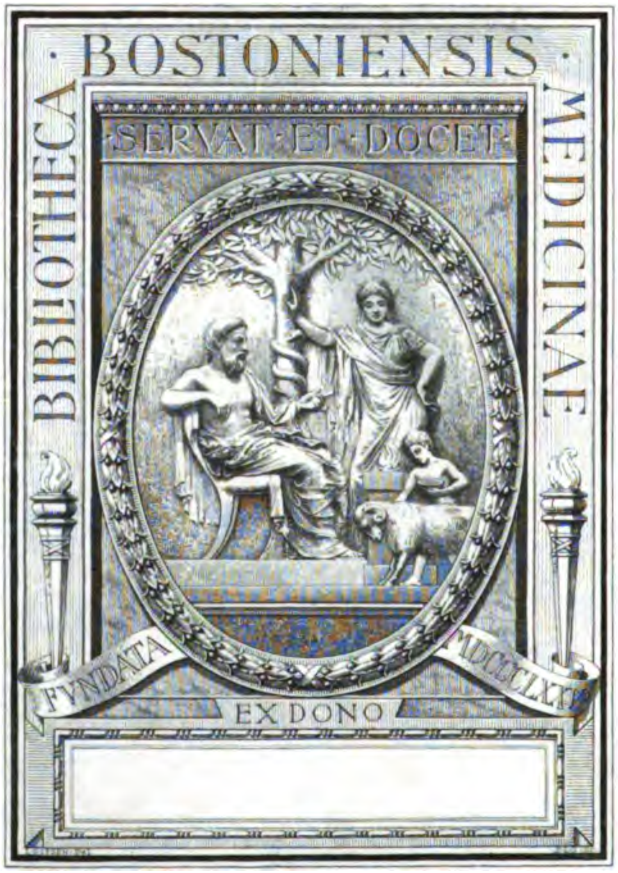
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ORIGINAL ARTICLES.

MEMOIRS.

MATERNAL IMPRESSIONS.*

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THE history of every science reveals a progress from supernatural to natural explanations of phenomena and in no department of science is this so clearly evident as in medicine, since this science above all others directly concerns mankind, and even the most primitive peoples are wont to regard themselves as the especial concern of supernatural beings, powerful to aid and powerful to wreak vengeance upon or even wantonly torment their protégés. And it seems probable that it is this very belief in supernatural influences which brings it about that ancient superstitions concerning things medical are more resistant than those which other sciences have to combat. The vitality of medical superstitions has undoubtedly been brought some time or other to the attention of every practicing physician for they are widespread and, unfortunately, are not confined to those, who, by common consent, are classed among the less educated members of the community. The belief that men have one rib less than women has not yet completely disappeared and how many are the believers in some of the superstitions concerning twins, in the good fortune which pertains to a caul and in many others of the more or less vain imaginings which have been handed down to us from early times. Indeed, it may almost be stated as a general principle, that any of the old beliefs which are still in vogue among the multitude are to be regarded with suspicion and should be accepted only after direct experimental confirmation.

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*Read before the WAYNE COUNTY (Detroit) MEDICAL SOCIETY, November 14, 1904.

This, it seems to me, is the proper standpoint to occupy with regard to the very prevalent belief in the influence of maternal emotions upon the offspring *in utero* and it is proposed to discuss in this paper the evidence upon which this belief is founded and the bearings of our modern ideas of development upon it; to enquire, in other words, whether it fulfils the requirements which we demand of scientific theories.

The belief is of wide prevalence both in time and space, dating at least from the time of the writing of the thirtieth chapter of the book of Genesis and occurring not only throughout European countries, but also, according to Ploss, in most diverse portions of the world. As Förster sharply remarks, "medical literature is full of it, but still more so the heads of midwives and other old women of both sexes." It appears under various garbs and receives, one may believe, almost universal acceptance among the laity, being generally associated with the belief that the mother mark, which is so certain to follow a violent emotion, will occur on that portion of the body of the child which the mother has touched upon her own person at the time she experienced the emotion. Indeed, so general is this belief that several cases may be found in the literature of the subject in which the mother-to-be has had sufficient presence of mind to touch a portion of her body, which, under ordinary circumstances, is concealed from view, so that the expected disfigurement of the child may be as unobtrusive as possible. As regards the prevalence of the belief among members of the medical profession it is interesting to note that it seems to be especially prevalent in this country, since out of ninety-one references given by Ballantyne for the decade 1886-1896, no less than two-thirds are to papers by American authors, the great majority of these papers being records of cases supposed to favor the belief.

In looking over the literature one readily perceives family likenesses, so to speak, between many of the recorded cases and one may classify them as (1) cases due to intense longings or cravings on the part of the mother; (2) cases resulting from more or less severe frights; and (3) cases following pronounced mental impressions other than fright. To these may be added a small fourth group of cases in which the impression supposed to have affected the child came from the father instead of from the mother. Concerning these cases of paternal impressions I shall not speak; the ideas which I shall endeavor to present regarding maternal impressions will apply with even greater force to those supposed to emanate from the father.

To the first group belong all cases of which the following may be taken as a type. The first child of Mrs. W., a girl, was marked upon the left buttock by a bunch of blackberries, because the mother during the seventh month of pregnancy had a "hankering" for blackberries, then out of season. The mark "always became quite black when these berries were in season and dark brown at other times."[1] Very numerous are the variants of this story, cherries, strawberries and other fruits, oysters, lobsters, fish and even a much longed-for switch of hair taking the place of the blackberries.

More serious in many instances are the disfigurements shown by cases belonging to the second group, one or two examples of which may be quoted. (1) Mrs. A. was frightened by a mouse which ran across her arm when she thrust it into the flour-bin and the child subsequently born had the mark of a mouse upon its arm.[2] (2) Mrs. X. when in the fifth month of pregnancy had an encounter with a vicious ram; the child born was a monster, having a head like a sheep, a stump of a tail, and was covered with black wool and had a bleating cry just like that of a young lamb. It is to be noted that in this case the mother had given no particular thought to her tussel with the ram after it was over.[3] (3) Mrs. A. after the birth of her first child contracted syphilis; her second child was born with spina bifida and was held by the parents, but not, it must be said, by the reporter of the case, to be a "catfish birth," because the mother during her pregnancy had been frightened by a cat fish.[4]

Finally in the third group are cases such as the following: The husband, who was a physician, witnessed the ceremony of circumcision at a Jewish neighbor's and on his return home described the proceedings in detail to his wife, who, at the time, was in the second month of her pregnancy. The account made a great impression upon the mother who talked of it for several days. When the child was born the attendant physician remarked to the father that the child had hypospadias, but the father replied instantly, "No! you don't mean hypospadias, but circumcision," and on closer examination it was found that the glans was completely exposed and the retracted prepuce showed the "yet granulating cicatrix of what looked like a recent circumcision."[5] Even more remarkable is the "Dundreary case" vouched for by Fordyce Barker,[6] which presents the extraordinary peculiarity that the impression was made four years before the child was born and, indeed, while the mother was yet unmarried. To this group also belongs the device of the patriarch Jacob for obtaining "ringstraked, speckled and spotted" cattle, and many more may be culled from the literature.

It would be of the greatest interest to discuss in detail the history of the belief, but this would be superfluous since it has already been fully treated by Tartuffi[7] and by Ballantyne.[8] For the proper understanding of its present status a brief historical sketch is almost a necessity; what I shall say on this side of the subject is drawn mainly from Tartuffi. And first, it may be stated that the belief in maternal impressions is intimately associated with the necessity for finding an explanation for monstrous births and is, indeed, a survival of one of these explanations. The occurrence of such births was a phenomenon which naturally evoked interest even in earliest times and just as naturally it was regarded as of supernatural origin, either a sign of the displeasure of a god or a portent of catastrophe to come. But along with such ideas were others ascribing more material causes, such as bestial and demoniacal connections, examples of belief in both these agencies being found in the writings of the classical authors, as well as in those of the middle ages and, indeed, into the renaissance, for one Fromann, a physician of Saxe-Coburg, taught in 1675 that although every monster was not a diabolical birth, every diabolical birth was a monster, and Licetus in 1616 admitted the possibility of monsters being produced as the result of a bestial connection.

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[1] MILLER: *Philadelphia Medical and Surgical Reporter*, XLV, 1881.
[2] CLAPPERTON: *British Medical Journal*, I, 1875.
[3] DOTY: *Philadelphia Medical and Surgical Reporter*, XLV 1881.
[4] SHIVERS: *Philadelphia Medical and Surgical Reporter*, XLV, 1881.
[5] GASKELL: *American Journal of Obstetrics*, IV, 1871.
[6] BARKER: *American Journal of Obstetrics*, IV, 1871.
[7] TARTUFFI: *Storia della Teratologia*, Bologna, 1881–1894.
[8] BALLANTYNE: "Transactions of the Edinburgh Obstetrical Society," XXI, 1896.

With the revival of learning there were developed, however, more natural theories as to the causation of monsters, largely as the result of the observations of Fabricius and Harvey upon the development of the chick, and the discovery of the human ovum by de Graaf (1672) and of spermatozoa by Leeuwenhoek (1679). But while the theories mentioned had practically disappeared by the beginning of the eighteenth century, the theory of maternal impression, which, as we have seen, was contemporary with the others, remained unimpaired in its vigor and still persists, though now shorn to some slight degree of its former importance, for no upholder of the theory today will venture to maintain that pregnancy itself may be produced by the imagination. And yet Bartholin refers to an act of the parliament of Grenoble passed in 1637 by which an adulterous woman was pardoned on the ground that the pregnancy had been brought about by the imagination of the husband who had been absent for four years, and a similar possibility was maintained by one Hartenfels in 1671 and by Grass in 1691.

The first serious blow dealt the theory came from an English author, Blondel, who, in 1727, criticized the known cases on the ground of the incompleteness of the observations. His book was translated into several languages and gained many converts both in England and the continent, leading such men as Haller in Germany and Morgagni in Italy to reject as unsatisfactory the majority of the recorded cases, while admitting in some instances the activity of a force which they could not understand.

With the nineteenth century there came a more thorough study of the entire subject of teratology, based upon the more perfect knowledge of the facts of mammalian embryology furnished by von Baer (1826) and resulting in the publication of several monographs in which not only a classification and description of the various kinds of monstrosities were attempted, but also discussions of the causes which produced them. Among these treatises may be mentioned more especially the "Traité de Tératologie" of Isidor Geoffroy Saint Hilaire published in 1836, Vrolik's "Handboek," published in 1840, Förster's "Missbildungen der Menschen," published in 1865, and Tartuffi's "Storia della Teratologia," published in 1881, and the opinion concerning mental impressions to which each of these arrives may be stated in the words of Saint Hilaire. After admitting that emotions of great intensity and duration may indirectly give rise to monstrosities and especially to cases of anencephalism and pseudencephalism, he goes on to say: "But although a mental emotion, sudden and violent, or even moderate or feeble but long continued, exercises upon the product of pregnancy a marked influence, there is no reason for believing that the same may be true of an emotion which is feeble and only momentary. It is contrary to all results of science and reason to believe that an object seen, feared, or desired by the mother can, so to speak, depict itself upon the body of the child which she carries in her womb; and a healthy physiology can see in this ancient belief merely a prejudice, as absurd and sometimes as dangerous as it is ancient."

This, I believe, is a fair statement of the opinion regarding maternal impressions held by all those of the present day who have made a study of the question from all its sides and I shall now endeavor to state as concisely as possible the grounds upon which the opinion is founded. It is to be noted, however, that the opinion is a negative one and it is admittedly a difficult task to prove a negative; yet this is the task which the teratologists must face. I shall not venture to maintain that they have accomplished this task, but I do hope to show that with the assistance of modern embryology they have rendered the position of the impressionists so insecure that with them rests the burden of proof that their position is tenable.

And first let me consider the relative frequency of the supposed cause and effect. Of course no one will maintain that a violent emotion necessarily affects the child, yet if the emotions are to be regarded as a *causa efficiens* in the production of anomalies or monstrosities it might be expected that there would be a fair proportion of effects compared with the frequency of the cause. Accurate statistics are, naturally, lacking, but there are some data which bear upon the matter. It is hardly necessary to refer to the general emotional condition of pregnant women, indeed, the word *hysteria* has its origin in a reference to the association of the reproductive organs with this highly emotional condition, and as one author upon the subject of maternal impressions has forcefully, if not elegantly, expressed it, "Every pregnant woman is on the watch, like a shying horse, for something to get frightened at; and such a something generally comes along, which, of course, she never forgets." It may be assumed, I believe, that the great majority of women during their pregnancies are subject to ardent longings or to severe frights, and yet how comparatively rare are maternal impressions which can be definitely referred to the emotion. Of course all possible cases are not recorded, but, on the other hand, so many of the recorded cases are so manifestly incorrectly referred to the cause under consideration that we are necessarily left with the general impression that the number of cases showing the effect is out of all proportion small compared with the occurrence of the cause.

And even if all cases of births with abnormalities be considered the proportion yet remains small. The statistics on the relation of normal to abnormal births vary considerably, it is true, Adam giving the percentage of defective births as 0.29 per cent for Vienna and 0.56 for Paris, while Förster in the records of eight thousand three hundred eighty-six found sixty cases of malformation, a percentage of 0.71 and Puech in one hundred thousand births found four hundred fifty-four anomalies, sixty-one single monstrosities and two double monstrosities, a total of five hundred seventeen or about 0.5 per cent. Such abnormalities as naevi are of course neglected in such statistics, but these do not form the majority of the recorded cases of maternal impressions.

In this connection the observations of Johannes Müller and William Hunter are of interest as approaching the matter from a somewhat different standpoint. Hunter interrogated two thousand pregnant women *before* the births of their children as to whether they had experienced any vivid emotion or had had violent longings so that they were in dread that the child would show some corresponding marks. The results were throughout negative so far as the marking of the child was concerned. The same result followed Müller's similar inquiries and Doctor G. J. Fisher[9] obtained absolutely negative results from inquiries in one thousand two hundred cases.

So far, then, as far as our information goes, there seems to be a marked discrepancy between the occurrences of the cause and of the effect, a fact not in itself an important argument, but nevertheless of interest in connection with other considerations to be brought forward. And here a word may be said as to the evidence upon which many of the cases are founded, and that is that it is *post facto* evidence. A mark or a malformation is noticed upon a new-born child and the physician, nurse, relatives, or interested friends in the fullness of their belief in maternal impressions promptly make inquiries of the mother, more or less leading in their character, and she, out of the multitude of her experiences of the preceding months need not find it difficult to discover one which fits the case sufficiently accurately. Through faith mountains may be removed and to the eye of faith it is not difficult, Polonius-like, to discover in an anencephalic monster the counterfeit presentment of a toad, and in a naevus a resemblance to a strawberry, a bunch of blackberries or almost anything else. And so the wonder grows, and it is recorded that the strawberry or raspberry mark takes on a deeper hue in the strawberry or raspberry season!

"Das Wunder ist des Glaubens liebstes Kind."

Incidentally it may be mentioned that a case is recorded of the birth during the French Revolution of a female child which had a dark spot on the arm. This was interpreted as a representation of the Liberty Cap and, the fact being reported to the government, the mother was the recipient of a premium for having given birth to a child with a revolutionary emblem on its arm.

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[9] FISHER: *American Journal of Insanity*, XXVI, 1870.

Embryology has shown beyond cavil that abnormalities, including under this term all malformations from anomalies to monstrosities, are, in the large majority of cases, inhibitions of the normal developmental history. The theory of maternal impressions, so far as they concern abnormalities other than naevi, must therefore maintain that the imagination of the mother has the power to inhibit the development of the fetus, and not only so, it must have the power of inhibiting the development of a definite portion of the fetus.

To this latter point, which is of the greatest importance in the study of the question, I shall return shortly. In the meantime let me call attention to another impairment of the value of many of the cases reported as supporting the theory, namely, that quite frequently the supposed emotional cause has acted some time after the period at which the normal development of the affected part should have been completed. In other words the true cause of the malformation has in many cases already accomplished its work before the supposed cause had become effective. Thus, to take an example, it is well known that the condition of hare-lip is the result of a failure of the maxillary process to unite with the processus globularis of the fronto-nasal process, a union which is normally accomplished early in the second month of fetal development. Cases of hare-lip are therefore to be regarded as due to an inhibition of the normal development of the upper jaw during the first six weeks or so of embryonic life and yet one finds recorded such cases as that of a hare-lip produced by a dentist roughly lifting the upper lip of the mother at a time when she was in the sixth month of her pregnancy, a case which the recorder states he has "no doubt occurred from maternal impression conveyed to the foetus;" or as those cases in which the cause was assigned to the mother having been startled by a rabbit or having been shocked by the sight of a hare-lip while in the fourth month of her pregnancy. Examples of cases showing other abnormalities to which a similar criticism would apply might easily be cited.

Embryologists are accustomed to distinguish between the embryo and the fetus, the latter term denoting an embryo which has acquired the general form characteristic of the human species and has all its organs differentiated, though not in all cases histogenetically completed. The transition from embryo to fetus occurs at the close of the second lunar month, and it is evident, then, that the great majority of abnormalities due to inhibition must have their origin during the early weeks of development, many of them, indeed, at a time when the mother may be uncertain or even ignorant of her condition. On the other hand, the majority of supposed maternal impressions are assigned to the later periods of gestation, and if really the effective causes of abnormalities, can only act by producing in the fetus a retracing of the developmental path already followed, an involution, if we may so call it, the occurrence of which we have no reason for postulating for the human fetus.

The theory of maternal impressions owes whatever vogue it possesses to the transmission from ancient times of a belief in it and to the accumulation in recent times of cases supposed to illustrate it, and I have shown that there are reasons which demand the rejection of a large percentage of reported cases as valid instances of its effects. But I would now go a little farther and inquire into the mode of action of the emotions upon the fetus, granting that such action exists. A theory of causation can never be completely accepted until a plausible explanation of its *modus operandi* has been discovered, and this has not yet been done for the theory under discussion. On the contrary the deeper we have penetrated into the mysteries of development the more reasons we have found for doubting the efficiency of emotional disturbances as causes for definite malformations. Several explanations of their mode of action have been propounded, and, dismissing from consideration hypotheses which call in the aid of such forces as animal magnetism, we will find that two have been received with greatest favor. One of these demands a direct nervous connection between the fetus and the parent, while the other regards the blood as the medium by which the emotion is transmitted.

As regards the first of these it may be said that no continuity of nerve tissue between the parent and fetus has been demonstrated by the most refined methods of histological technique. And not only so, but these are good reasons for doubting its existence. We are too apt to let our attention linger upon the union of the fetal and the maternal tissues in the placenta and to regard the fetus as anatomically and physiologically a part of the mother. On the contrary, the embryo is a parasite and is quite distinct from the parent, as distinct as is any parasite from its host. The study of the nutrition of the embryo from the comparative standpoint furnishes ample grounds for such a view, and all gradations from such a condition as is found in the oviparous monotremes to that occurring in the viviparous placental human species can be found within the group of the mammalia. Without going into the details of this I may merely point out that the ovum is set free from the Graafian follicle and normally traverses the entire length of the Fallopian tube perfectly independent of the parent, and only later establishes a connection with the uterine walls. It is for a time, therefore, a free-living independent organism and only secondarily becomes a parasite. And this being true, what grounds have we for believing that there is likely to be any continuity of the nervous tissue of the fetus with that of the parent? We do not expect such a condition in other parasites and why should we do so in the case of this one?

As to the blood forming the medium for the transmission of the impression, a little thought will convince one of the improbability of its possessing any such function. It has no properties which would lead us to regard it as a conducting tissue. But apart from this it is well known that there is no direct continuity between the maternal and fetal bloods in the placenta. The two fluids are completely separated by a membrane through which all interchange of gases or dissolved material must take place, and furthermore this membrane exercises a selection in the substances which it will allow to pass. It may be that it does not exert a judicious exclusion of mental impressions, but even so it is difficult to understand why one of two twins should be affected, while the other goes unscathed, as occasionally happens. This fact by itself is sufficient to awaken strong suspicion as to the blood playing any such rôle as that which we are discussing, and if we exclude all idea of the continuity of the nervous system we are left without any explanation for the supposed effect of the maternal emotions, unless it be assumed that some intangible mental force exists of which at present we have no knowledge.

But are we driven in our ignorance to assume the existence of such a force? Have we progressed no farther in the understanding of the causes of abnormalities than our remote forefathers, who were continually driven to appeal to some force lying beyond the pale of experience for the explanation of what seemed to them marvels? I believe that we have progressed greatly, and that teratological phenomena have been brought down from the realms of the supernatural to take their place in the ranks of scientific facts. Within recent years the effect of modified external conditions upon the development of organisms has been the subject of many experimental studies and it has been found at the same time to be very largely a study of the production of abnormalities. True, from the nature of things it has not been possible to carry on any very extensive experiments upon mammalian ova and still less upon the human ovum, but the results obtained with the ova of invertebrates, to say nothing of those observed in the case of the frog and the chick, have been so striking that we are warranted in assuming that in a general way they will equally apply to the human ovum.

Omitting as unlikely to affect the human ovum the effect upon the developing embryo of modifications of temperature, light, or electrical conditions, it may be said that alterations in the partial pressures of the surrounding gases or in the chemical composition or osmotic pressure of the surrounding media play very important parts in producing disturbances in the development and frequently result in the production of monsters. Thus, to mention only a few experimental results, Dareste and Roux found that an interference with the normal access of oxygen, produced by varnishing the shell of a chick egg or by excluding air from developing frogs' eggs, produced numerous inhibitions of development and so gave rise to abnormalities; Pouchet and Chabry found that by diminishing the calcium-content of sea-water by only one-tenth of its normal amount the development of sea-urchin ova was materially altered, and by increasing the diminishment of the content highly abnormal embryo resulted. Similar results were obtained by Herbst by the addition of small quantities of potassium salts to sea-water, and especially striking were the results obtained by the same author by adding 0.1 per cent of lithium salts. Oskar Hertwig found that the exposure of frogs' eggs to a 0.5-1.0 per cent solution of sodium chloride for half an hour after fertilization produced striking abnormalities in the development, a failure of the anterior portion of the medullary groove to close being especially interesting as producing conditions which in human teratology are known as anencephaly and hemicrania.

When we consider the complicated nature of the metabolic processes proceeding with so great rapidity in the human ovum that in the first eight weeks of development it increases its weight over six thousand times, when we consider how important relatively slight changes in the environment, as shown in the experiments just referred to, may be in modifying the metabolic processes, and, finally, when we recall how minute quantities of certain substances, notably the iodine-content of the thyreoid body, play such important rôles in the metabolism, it seems that we have at hand a sufficiency of explanations for abnormalities, without calling in the aid of some indefinite and intangible force. And this, too, without referring to the mechanical causes of abnormalities, whether of the nature of direct mechanical insults or resulting from amniotic bands or adhesions; they are unquestionably effective in the production of abnormalities and evidence of their action is plentiful both on the clinical and the experimental side. Nor has reference been made to causes innate in the constitution of the ovum or in that of the fertilizing spermatozoon. Either one or the other of these cells may undoubtedly be at times the seat of pathological conditions either inherited or acquired, and these may eventuate in the development of a monstrosity or abnormality. Cases of maternal impressions, however, referred back to the ovum are, in the very nature of things, unlikely; one is reported, however, namely, the Dundreary case of Fordyce Baker already referred to. It is unnecessary to discuss this case in detail; it will stand or fall with the other supposed cases of maternal impression, for if the embryo may be affected in this way there is no reason why the ovum should not be also affected. I shall, accordingly, pass on to a consideration of a point to which, it seems to me, attention has not been sufficiently directed.

It may be urged that the parent forms the environment of the fetus and that any change in the environment must be a change in the parent and especially a change in the quality of the maternal blood. Why, then, may not severe emotion on the part of the mother be capable of altering the environment sufficiently to produce fetal abnormalities? The reasoninig is in part quite correct and the conclusion likewise. But granting the power of the maternal emotions to produce abnormalities is not admitting that the abnormalities so produced will be definite ones and that is the *crux* of the theory of maternal impressions. It holds that the impression will bear more or less resemblance to the cause of the maternal emotion.

Consider what this demands. It requires not only that the emotion shall affect the development of the embryo, but also that it shall affect in some cases merely a small group of the myriads of cells of which even an early embryo is composed and that it shall furthermore affect this group in a definite and determinate manner. This, everyone will surely admit, is quite an extensive series of requirements and one which cannot readily be made to fit in with the views which have resulted from our increase of knowledge as to the mode of differentiation of the ovum during development. So long as the ancient doctrine of preformation existed, a doctrine which maintained that the organism in all its parts existed fully formed in miniature in the ovum and that the process of development was merely an unfolding as it were of the germ, so long was there a plausible explanation for maternal impressions. Long ago, however, in the middle of the eighteenth century, this theory was brought into disrepute by Caspar Frederick Wolff, who, in his "Theoria generationis," showed by actual observation that development consisted in the differentiation of new structures out of a non-differentiated preëxisting material, a process to which he applied the term epigenesis. As the result of increased facilities for observation and the active study of the process of embryonic differentiation the old doctrine of preformation was entirely given up and a search for the cause of epigenesis begun. And in one of the most important of the earlier theories we find a tendency to return toward preformation. For His in his studies of the development of the chick noted the definiteness with which each organ appears in a certain area of the germinal disk of the embryo, and propounded the view that while we could not regard the various organs as existing as such in the germinal disk, yet, nevertheless, we must regard the disk as composed of definite organ-forming areas. And if such areas occur in the disk they must manifestly continue back through the segmentation stages to the unsegmented ovum, which must consequently be regarded as differentiated to the extent that any given area of it is destined to give rise to a definite organ or group of organs.

Such a view was open to confirmation or disproval by experimentation, and the first experiment conducted by Roux appeared to confirm it. Roux destroyed one of the segmentation spheres of the two-celled stage of the frog's egg and found that the remaining sphere went on developing as if the other were present, a half-embryo resulting, as if all the organ-forming areas of one-half of the body had been located in one of the first two segmentation spheres and all of those of the other side in the other. Further observation, however, served to modify this conclusion, for, in the first place, it was found that if development was allowed to proceed the half-embryo regenerated the missing structures and a whole embryo resulted; and, in the second place, it was observed that in other ova, such as those of Amphioxus or a jelly-fish, each of the two first spheres possessed the power, from the moment of its separation from its fellow, of developing as a whole ovum, and gave rise to a whole embryo of half the normal size. And not only so, but each of the first four cells, or even of the first eight cells, or, in the jelly-fish, of the first sixteen cells, possessed the same power, the resulting embryos being whole embryos, but of only one-quarter, one-eighth or one-sixteenth the normal size. Evidently then the doctrine of organ-forming germinal areas could not be maintained, at least in its original form.

It would take too long to even briefly describe the various results which have led to the position at present occupied by the majority of embryologists, and the nature of this position must be stated as briefly as possible. A certain amount of differentiation is recognizable in some ova and little in others and the line along which any given spherule differentiates is dependent upon its surroundings. Under normal conditions any given cell in the developing ovum of any species will differentiate along the same lines in every individual of the species, but if the conditions be modified, if the position of the cell with reference to its fellows be changed, if the environment be altered the line of differentiation will also be altered. In other words, it would seem that there is an interaction, physical or chemical, between all the cells composing the embryo, and that as development proceeds, by the multiplication of the cells the interactions become more complex and varied, leading to the differentiation of one cell along one line and another along another. Chemical or physical changes in the environment may affect all the interactions or they may affect only those taking place between certain cells, and so all gradations of abnormalities may occur.

If this view be correct, then it is surely difficult to perceive how a maternal emotion can affect a given group of cells so as to produce a definite result. Can we imagine the emotion experienced at the sight of a rabbit producing just the exact change in the environment that is necessary to affect the interactions between the cells composing the maxillary process and the *processus globularis* so as to prevent their union? Or can we imagine a longing for cherries so affecting the interactions between the vasifactive cells and those of the dermis and epidermis as to produce a naevus the exact counterpart in form and color of the coveted fruit, to say nothing of this disturbance of the interactions taking place only in a part of the body corresponding to that touched by the parent while experiencing the emotion? Putting the matter in this way is it not almost a *reductio ad absurdum?*

The position that we have reached then, is that while a belief in the view that emotional disturbances of the mother may affect the embryo is justifiable, the theory of maternal impressions, to the effect that the maternal emotions may produce a definite and determinate abnormality corresponding to the emotion, is, to say the least, improbable. And the grounds for this opinion which I have endeavored to set forth are, briefly stated, as follows:

(1) There is no definite relation between the occurrence of the cause and the effect.

(2) The evidence of the theory is very largely *post facto,* and all attempts to obtain *ante factum* evidence have resulted negatively.

(3) The supposed cause has acted in many cases at a time long subsequent to that at which the abnormality could have arisen.

(4) No plausible means for the transmission of the cause to the embryo have as yet been discovered.

(5) All abnormalities can be explained on the basis of known physical forces inhibiting or modifying the normal processes of development, and there is no reason for calling into existence an unknown psychical force.

(6) The fact that the theory demands a definite and determinate response to the stimulus puts it quite out of harmony with the results of modern investigation into the causes of embryonic differentiation.

It cannot be maintained that the theory has been absolutely disproved. The question at present must be largely a question of the balance of evidence. But this balance seems to be largely in favor of the anti-impressionists and it rests with the impressionists to make good their case. And this cannot be accomplished by the mere heaping up of data similar to those with which we are at present burdened. Not only do many of the reports of cases present a painful lack of appreciation of what constitutes scientific evidence, but practically throughout there is an absolute failure to properly correlate the facts of embryology with the observed phenomena. Indeed, one is tempted to say that the final solution of the question rests with the embryologists, for they alone have opportunity for delving sufficiently deeply into the mysteries of embryonic differentiation to have hopes of discovering its ultimate causation.

THE TREATMENT OF CHRONIC PLEURITIS AND EMPYEMA.*

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THE discussion of the treatment of chronic pleuritis and empyema would be far more complete with a presentation also of the pathology and clinical history as a basis, but as our time will not allow of such an array of the subject, I shall come to the topic alotted me as soon as I have made a few statements concerning my understanding of the conditions in chronic pleuritis and empyema represented by various aspects. As we all know, there are several varieties of subacute and chronic pleuritis based upon varying exciting and predisposing causes. From one point of view we may roughly classify the disease into primary, secondary, and complicated. From another point of view as simple, serous, serofibrinous, plastic, atrophic, tubercular, and traumatic.

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*Read before the WAYNE COUNTY (Detroit) MEDICAL SOCIETY, December 12, 1904.

Writers have from time to time emphasized the part which the pleura takes in the pathogenesis of all acute and chronic diseases of the pulmonary apparatus. On the other hand, writers have also emphasized (and perhaps exaggerated) the local importance of diseases of the pleura. A happy medium between these two extremes is the one generally adopted by clinicians at the present time, because it has been found that the personal equation, or individuality, or the particular environment, or predisposition of the subject are very important factors for consideration. I may say in passing also that many recent writers have shown a disposition to sum up all the acute and chronic diseases of the pleura as purely infectious diseases—depending upon the invasion of microorganisms, so that we shall find in medical writings mention made of an acute or chronic pleuritis due to the streptococcus, the pneumococcus, the staphylococcus, the influenza bacillus, the typhoid bacillus, or the tubercle bacillus, and also to one or two families of the actinomyces. Indeed, in the writings of the more sanguine members of the profession may be found promulgated the doctrine that almost all cases of acute and chronic pleuritis are caused by the invasion of the tubercle bacillus, some believing even that chronic pleuritis of the nonpyogenic class is essentially analogous to tubercular peritonitis.

Accumulative experience, however, has modified very much this latter view of the etiology of the disease in question, for while these organisms, or others which I have not mentioned, have often been found in the exudates—whether serofibrinous, plastic, or purulent—yet the reports of cases where the exudates have been obtained directly from the pleural cavity in a sterile condition have multiplied to such an extent as to show a very large number of exceptions. The failure so often in finding the sought-for microorganism is explained by the assumption that the microorganisms although surely there, have been, through defective technique or paucity of number, overlooked. This sort of judgment is undoubtedly correct sometimes, but not frequently, and is in striking analogy to the oft-repeated story of the Scotch justice of the peace, who rendered judgment in a given case as "Guilty, but not proven!" However, it is not within the province of this paper to take up the discussion of this phase of the subject, and I must drop it and proceed upon the following basis:

Chronic pleuritis may be the sequence of acute pleuritis, bronchitis, pneumonia (especially the influenza varieties), any of the exanthemata, a limited previous tubercular disease of the lung, of carcinoma or injury, or rheumatism, or, it may come on insidiously as a subacute affection. (The question whether it is infectious, partially or wholly, in all cases we cannot take up tonight.) Likewise it may be said of empyema that, although more apt to follow acute pleuritis and other acute lesions, it may also be the result of a long existing chronic pleuritis of the seroplastic or plastic variety.

From all of this it is apparent that the treatment of these affections cannot be formulated, so to speak, and although the therapy can and should be conducted according to scientific methods, yet a dash of empiricism is bound to be included in almost every case of long standing. The large number of lymph glands and vessels, which anatomically characterizes the subpleural layer, the intimate and extensive anastomosis of these vessels with the deeper layers and with the tissue of the lung, and abdominal viscera, and the convergence of nearly all of them at the hilum of the lung into the rich implantation of bronchial glands, which marks that region and the mediastinum, at once furnishes the therapeutic cue for medicinal treatment. This lymphatic tissue and its connections—as stated above—with the bronchial glands, also furnishes an explanation of the often observed tendency to extension of pleurogenic fibrosis which so frequently, if not carefully watched, baffles our best laid plans by inducing cirrhosis of lung tissue. For instance, while both nature and art are moving hand in hand toward the development and organization of connective or fibroid tissue for the purpose of hindering or strangling the disease process, we may find to our chagrin that both nature and art have stimulated to such an extent this structural process that the new fibroid tissue is actually cutting off the nutrition of a large portion of the viscus, thus leading to dire results, such as gangrene, molecular necrosis, necrotic abscess, intolerable bronchiectases, tuberculosis and numerous vascular aneurisms and varices. These untoward results, of course, cannot always be prevented, for, with due deference to the wisdom of nature's processes she, here, as elsewhere, frequently will overdo the curative process. Lack of time will prevent the discussion of the diagnostic points connected with this condition. However, general practitioners are fully alive to the many difficulties and perplexities met with in this field, and it will probably be unnecessary to even touch upon these points.

Empyema, a collection of pus in the pleural cavity, as we know, is more often a consequence of some form of acute pleuritis, acute lung disease, or acute bodily infection. We meet with it perhaps more often in children than in adults. In the former instance it is frequently a sequel to acute pulmonary and nephritic affections, influenza, and sometimes tuberculosis. In the adult it is more frequently the consequence of acute and chronic pleuritic affections, or secondary to bronchitis or influenza. Sometimes it follows in the course of rheumatism (especially gonorrheal rheumatism), or appendicitis. The pus very rarely occupies the whole pleural cavity, nor is it often upon both sides of the chest. It is usually limited by fibrinous bands or adhesions, and is locular. It sometimes appears between the diaphragm and the lower surface of the lung, in which case it is known as "diaphragmatic" empyema, and very rarely indeed do we have an independent collection at the upper part of the chest cavity. When such an event transpires, the subject is usually a child.

The exudate in nonpyogenic forms of chronic pleuritis is usually serous, serofibrinous, or plastic in character, the dry form belonging exclusively to the chronic pulmonary diseases—such as interstitial pneumonia, chronic bronchopneumonia, or pulmonary tuberculosis. Empyema as an accompaniment to chronic pulmonary tuberculosis is far from common, although the subacute or chronic pleuritis with serous or serosanguinolent, or seroplastic exudate often takes place when there is a slight tubercular formation at the apex of the lung. The granular surface so often observed in chronic pleuritis was formerly supposed in all cases to denote the formation of tubercle in the pleural tissue itself. However, this has been found in the majority of instances to be ordinary granulation tissue, and it is through this histologic process that the enormous thickening of the pleura by successive organizations of lymph layers is brought about. This process may affect both the parietal and visceral pleura, either of which reach from an inch to an inch and a half in thickness.

The plan of treatment resolves itself into the medicinal and surgical. The medicinal treatment requires considerable care and a thorough appreciation of the general conditions of the patient, and the paramount tendencies of the bodily functions. A chronic pleuritis characterized by considerable effusion of serum can often be well managed by directing efforts toward the nutrition of the patient and stimulation of absorption. The former point must be kept in view, if there be any tendency toward amyloid degeneration of such organs as the liver or spleen. We must also take into consideration the probability of pressure upon the heart or lung itself, or upon the vessels and nerves adjoining the root of the lung. We must also consider the question of antecedent or prospective pneumothorax in this connection. Therefore, if respiration or circulation be embarrassed to a great extent paracentesis by means of the aspirating needle should be resorted to. To our discouragement, it will often be found that after a week or two, and sometimes a few days only, the fluid which we have drawn off is replaced by a fresh effusion, and the operation will have to be repeated.

At this juncture we must consider the question of malignant disease of the mediastinum or of the lung. The course of sarcoma of the pleura, of the lung, or of the glands of the mediastinum will frequently present this clinical picture. However, when the fluid drawn off is serous or bloody serum even, the process ought to be repeated for a number of times. After having drawn off the fluid from three to six or seven times without permanently reducing the effusion, it will be found advisable not to repeat the process unless obliged to do so. Place the patient in a recumbent or semirecumbent posture, with free access to fresh air, redouble the efforts for improving nutrition, and then, if not too embarrassing to respiration, strap the affected side. The use of the pneumatic cabinet will often prove beneficial, providing the patient is not kept too long within its walls, or too much air is not pumped out from it. I think in almost all cases that, as soon as recovery from the shock of the puncture has taken place and if the patient be strong enough, respiratory gymnastics should be adopted with a view of forcing the lung in place, or even if adhesions have taken place stretching the adhesive bands. Such obstruction does not often offer an insuperable objection to the plan of trying to expand the compressed lung. If the exudate be almost plastic, of course aspiration with a good-sized needle, or with a trocar one-tenth inch in diameter, will fail to relieve the pleural cavity for obvious reasons. In such cases the question arises, shall we enlarge the opening and insert a drainage tube, or shall we make a thorocotomy by the excision of one or two pieces of rib and curet the cavity, thus bringing about an empyema? This course, in my opinion, should be adopted if the case has been under observation long enough to prove that under the ordinary medicinal and hygienic treatment the disease is progressing, or even persistent. Should this condition be accompanied by evidences of pneumothorax, then there can be no question but that the outside opening should be made. It is well to call attention to the fact that pneumothorax is sometimes a phenomena resulting from some sort of as yet unknown decomposition or fermentation of the contents of the pleural cavity. In such a case, if it be persistent, the rule must be thrown aside and we must open the chest, for this will constitute perhaps a lesser danger. To distinguish this particular condition from the ordinary simple pneumothorax is not easy, nor can the art of auscultation always solve the problem. If, however, with the physical signs indicating the pneumothorax we notice more or less permanent loss of pulse tension, incomplete or labored inspiration, some hiccough, an asthenic condition of the patient, and withal notice that the amount of gas seems to be increasing, as also the collapse of the lung, then it would be fair to assume that the exudate is the origin of the gas in the pleural cavity. We should then act promptly in giving it and the contents of the sac an early exit.

The line of medicinal treatment which has proven useful in my experience is, first, stimulating the appetite and increasing the nutrition by every possible means, such as the administration of goodly amounts of milk, with or without eggs and bacon, every three or four hours, the ingestion of chopped meats either alone or with the addition of hydrochloric acid, or hydrochloric acid and pepsin; the administration of iodin and mercury in doses which are alternately augmented and diminished, according to effects. In cases where fibrosis is coming on rapidly, with retraction of the chest and scoliosis, the persistent use of phosphorus and the addition of fats to the dietary regimen is beneficial. I mean by this that there should be a gradual withdrawal of the proteids from the diet and their place substituted by fats, such as cod-liver oil, bacon, or any of the animal or vegetable fats, as may be most agreeable to the patient. Too much attention cannot be given to this phase of the disease, because excessive fibrosis will surely terminate the patient's life—even without the intervention of tuberculosis.

With protracted cases indicating adhesions between the pleural surfaces and pulmonary collapse, even without the presence of pus, the question arises as to the propriety of performing a thorocotomy and breaking up the adhesions at once, although such a surgical treatment is not without some danger. The first and perhaps principal bad liability is the advent of an acute pleuritis on the opposite side. Secondly, the induction of hemorrhage which may be primarily fatal or secondarily fatal. Next the effect upon the heart status, especially when there are adhesions with the pericardium, as we often find in left side pleurisies. While I have had as many recoveries as fatalities, at least in operating for chronic pleuritis, yet I feel that such a procedure ought not to be adopted without a great deal of circumspection; and I have sometimes been amazed while listening to the positive manner with which some practitioners have advocated this operation for such or even milder conditions. I do believe that if I were an expert surgeon, I would be unwilling to be so positive in the advocacy of operation, unless forsooth I happened to be amply aware of the conditions existing within the thorax.

People may frequently be met with who have lived through a protracted course of pleuritis with fibroid degeneration and extensive adhesions to a good old age, and who have never had any surgical interference whatever. We also note at necropsies that such conditions are responsible for the early death of some individuals. In empyema there is no question about promptly evacuating the pus—that greatest enemy of mankind! Sometimes, in recent cases, delay is advisable. When, however, the constitutional disturbance from septic poisoning is considerable and progressive, and the amount of pus stored in the pleural cavity seems considerable, then delay constitutes a grave error, for the reason that we must try to save the lung from permanent or partial collapse, and we must save the life of the patient thus threatened by septic poisoning or subsequent tuberculosis. Whether there be any evidence of tuberculosis or not at the time, there is but one rule to follow and that is, to evacuate the pleural cavity. This may be done by the use of a trocar or bistoury.

With children, where the case is compartively recent and there is no evidence of any considerable adhesion,.simple opening is quite sufficient and the excision of the ribs often unnecessary. With adults, however, I believe that in almost all cases a piece of one or two ribs ought to be excised, so as to give free drainage. The use of the aspirator, even with a large canula one-tenth inch in diameter, is, according to my experience, generally futile, although there are cases where the patient is extremely delicate, and the collection of fluid quite large, where the use of the aspirator or trocar as a preliminary measure to draw off some of the pus is advisable. A few days after, the incision operation may be undertaken and the cavity drained out. The drainage tube should be left in until the discharge shows no evidence of pus and there is but little serum secreted. Many cases are fraught with ulterior difficulties when this precaution has not been observed. It may sometimes happen that the collection of pus is in two or three cavities, and we find that we have evacuated but one, which, although connected by a fistulous opening with the others, is found to give us more or less delay in restitution. More often than otherwise, however, a little patience and persistent manipulation with a rubber bougie will bring about the ultimate discharge of all the cavities. Sometimes, however, a second or even third operation has to be made in order to rid the patient of the collection. At the time of the first opening the cavity should be well explored with the finger or a rubber bougie, the diseased lymph floating about should be brought out, and some of the adhesions broken. I say some of the adhesions because thorough breaking up of the adhesions or curetting at this time might bring about shock and death. If the results prove imperfect, persistent open fistulæ remain discharging pus, and the patient continues to suffer more or less with pyrexia, anorexia, et cetera, then a more thorough operation becomes necessary.

It is for such cases that the operation known as Estlander's is frequently performed. Estlander's is the operation although there are from ten to a hundred operations of this character which are named after different individuals, but they are all nearly the same. Whether we make an S-shaped flap, or a crenated flap, or a crucial flap, to get at the chest walls it is still an Estlander operation, although the little modification of cutaneous incision may have been made by Doctor A. or Doctor B. I once made an S-shaped flap in operating and a colleague standing by, very promptly criticised my apparent stupidity, and asked why I thus departed from the rule. When I replied that I was thinking seriously of naming the operation with an S-shaped flap a "Shurly" modification of Estlander's operation, he apologized.

It is unnecessary to occupy time describing Estlander's operation. Sufficie it to say, it constitutes the excision of pieces of several ribs according to the amount of pus in the cavity; then dissecting off from the lung the thickened pleura, breaking other adhesions which hold the lung down as far as practicable, and afterwards covering the excavation with the skin. Of course, the intercostal muscles are excised with the ribs. In doing this it is advisable to avoid cutting too much of the pectoralis major or latissimus dorsi muscles. The wound is usually packed with some aseptic gauze, and quite an opening left for drainage. This opening should be left at about the middle or upper part of the wound, as it is found that the final drainage takes place either at the middle of the wound or at the upper part.

As I stated before, there are a great many modifications of this operation. Some of the modifications that we read about are brutal and unjustifiable and those that I am acquainted with have always resulted fatally. In my own limited experience, I have not found it necessary to go into this wholesale excision of the chest but a few times. One case in which I made an Estlander operation—a protracted one—promptly died, and another case of the same sort and operation recovered. The former was a left-side case, in which we had difficulty in avoiding the protrusion of the heart to some extent. The hemorrhage from this operation is sometimes considerable. Why it is not always a highly dangerous element cannot be explained. It is a serious menace, of course, because we cannot very well tie the vessels and have to trust to hemostatics and packing.

For the simpler thorocotomy the points of election are somewhere about the fifth interspace in the midaxillary line. Some recommend the ninth. I do not think, however, that any fast rule can be laid down for this step. Such operations should *always* be preceded by aspiration, which will often determine the best point for making the excision of the rib. The drainage tube should be large, and, I think, double. In almost all instances I make the opening large enough to insert two rubber tubes of at least one-half inch diameter. These are kept from slipping into the cavity by arming them with large-sized safety pins. When the cavity is first opened I think it is well to stem the outflow of pus temporarily to avoid danger from shock or syncope, which has been known to occur at this juncture, probably from too rapid evacuation of the contents. Indeed, it may occur after a simple paracentesis.

With regard to irrigation I feel like stating positively that in no case, excepting those complicated with gangrene or septic exudate, should irrigation be made for several days. After the patient has recovered from the shock, and his appetite has returned, pulse tension going up, and there is considerable discharge showing floculi of lymph, then I think irrigation once or twice daily should be done. The irrigation fluid which I have been accustomed to use has been a one per cent solution of carbolic acid. I formerly employed peroxide of hydrogen, but on account of the danger from evolution of gas in the cavity I have ceased to use it. One fatality occured in my practice which I think was wholly due to this agent, in a left-side case of empyema.

In conclusion, gentlemen, I would like to call attention to two or three points. The operation of thorocotomy and paracentesis is certainly very often done and usually without any ill-consequences. A limited experience ranging over several years leads me to the conviction that notwithstanding the positive nonapprehensive manner in which many writers view these operations, yet a great deal of care and judgment is necessary in the diagnosis, and manipulation. It may be that some of us are unskillful and are to blame for untoward events. However that may be, I have witnessed fatalities from simple paracentesis following the puncture of the lung. I have had patients die from manipulations for breaking up moderate adhesions. I have had fatalities from internal hemorrhage. I have known of the liver or the splenic flexure of the colon to have been punctured by the careless use of the knife, needle or trocar. I have also had a number of cases in which acute pleuritis of the opposite side has been brought on, rendering the case fatal, after a most favorable operation. I have had cases of gangrene of the lung or gangrene of the fibrinous exudate take place notwithstanding the most thorough drainage and asepsis. Many cases of cerebral meningitis and peritonitis have been reported as following even the simpler operations on the chest. Notwithstanding this, I think it is our duty in protracted cases of chronic pleuritis or chronic empyema to resort to surgical measures rather than allow the patient to go to the grave with amyloid degeneration, tuberculosis, or progressive exhaustion.

A CASE OF DERMOID CYST OF THE MEDIASTINUM.*

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[FROM THE CLINIC OF INTERNAL MEDICINE - DOCTOR DOCK.]

THE case whose history I have to report is of especial interest because of the rarity of the affection with which the patient is suffering. Before proceeding, however, I should apologize to the Society for the incompleteness of both history and physical examination. The explanation is one which of necessity must be offered by those connected with hospitals devoted to teaching purposes and is found in the fact that the patient entered the clinic at the end of the Summer School session when most of the clinical staff had left, and the remainder was about to leave, for a short holiday.

The patient, C. R., a male, aged twenty-three, American, unmarried, a railroad man by occupation, entered the out-patient department of the University Hospital, July 19, 1904, where I first saw him with Doctor Ellis. From certain points in the history which will appear presently, together with the result of the physical examination, I diagnosed the condition as probable dermoid cyst of the thorax, though unaware at the time of similar cases. The patient, a resident of a neighboring town, was unable to remain at this time but was advised to return. This he did. On July 27, 1904, he was admitted to the medical ward and the following history was obtained.

On admission the patient complained of cough, expectoration of large quantities of foul-smelling sputum, and hemorrhages from the lungs.

Family history.—Father is living and well. Mother has had "stomach trouble" nearly all her life but is in good health at present. The patient has two brothers and three sisters who are alive and well. An aunt on the father's side died of "hemorrhage of the lungs and dropsy;" nothing more definite is known of her case. Otherwise the family history is negative.

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*Reported before the WASHTENAW COUNTY (Ann Arbor) MEDICAL SOCIETY, October 12, 1904, with demonstration of a hair from sputum.

Personal history.—As a child the patient was very well. He had "measles," "chicken-pox," and a mild attack of "diphtheria," or "tonsillitis;" in all instances recovery was uneventful. At the age of twelve the patient had a diarrhea which persisted for about a year. Since then the patient has enjoyed good health until the onset of the present trouble.

History of the present disease.—About nine years ago (eight years according to out-patient history), that is, *about the time of puberty,* the patient had a severe attack of "pneumonia" on the left side followed by a feeling of tightness across the chest and pain on breathing; the latter was localized to an area about the size of a hand in the precordial region. Prior to the attack of pneumonia the patient says he was *struck over the heart* by a drunken man and ascribes the pneumonia which soon followed to the blow which he received. Between the time when he was struck and the development of the pneumonia he had *severe neuralgic pains in the region of the heart and in the left shoulder.* A year later the patient had another attack of "pneumonia" which lasted about eight weeks. During a coughing fit a *large quantity of "pus" was coughed up at one time* ("over one quart.") The "abscess" or "empyema" discharged three times in the next three or four days. The patient describes the so-called pus as a "yellow, semifluid material." After raising this material the patient became much better but has coughed and expectorated a good deal ever since. Four years ago the patient had a very severe hemorrhage from the lungs and since then he has had one about every six months. The last one occurred just before the patient returned to the hospital. At times the hemorrhages amount to about one pint. During the last three years the patient has noticed a "rotten" odor to the sputum. In March, 1904, he went to Colorado for his health. He was examined by a physician and told that he had empyema; operation was advised. This the patient did not submit to. No tubercle bacilli were found in his sputum at this time. For some time the patient has *coughed up hairs* in his sputum; these are from one to six inches long. Since last March there has been some soreness over the right side of the chest. Expectoration is much more profuse when the patient is lying down. He has not lost weight.

Status praesens.—July 29, 1904. Temperature has been normal since admission, respirations 20, pulse 72, regular, of fair size and tension. No palpable thickening of the arteries. Patient looks very well nourished. Active dorsal position. Mind clear. Build rather short and stocky; strong frame. Panniculus fair. Muscles well developed and rather soft. The skin is of good color, smooth, dry, and elastic. No edema at ankles. There are no stiff joints. Lymph glands above left clavicle and behind left sterno-cleido-mastoid are slightly enlarged; otherwise negative.

Expression is negative. Pupils are equal, react well. Sclerotics are clear, slightly bluish. Conjunctivæ and lips are of good color.

The teeth are in fairly good repair. The tongue is large, clean, and moist.

Examination of neck is negative.

Thorax is well formed, rather large. The left side seems slightly fuller than the right. The epigastric angle is about a right angle. Expansion is rather small, slightly less on the left side, especially on deep breathing; the difference is more noticeable in the lower part of the thorax. The clavicles are equally prominent. On percussion the apices are of equal height, about one and one-eighth inch above the clavicles. Above the second rib the percussion note is the same on the two sides. Below this level the note is somewhat hyper-resonant on the right with relative dulness throughout the left front, the ***upper border of the relatively dull area sloping downwards and backwards into the left axilla.*** Traube's space is clear. There is no absolute liver dulness. The lung-liver border is on the sixth rib in the right nipple line; it extends straight around. The lung descends to the seventh rib on deep inspiration. Auscultation above the right clavicle gives rather harsh vesicular breathing with fairly high-pitched sibilant râles on inspiration; below the clavicle throughout the right side there is moderately strong vesicular with no adventitious sounds. Above the left clavicle the breath sounds are obscured by sonorous rhonchi which are heard both on inspiration and on expiration. Below the left clavicle there is harsh vesicular accompanied by dry râles of medium pitch, the vibrations of which can be felt on palpation. Below a line drawn from the anterior axillary fold to the left nipple the vesicular is very weak and toward the end of inspiration a few crepitant râles are heard. The ausculted spoken voice is slightly weakened between the second and fourth ribs on the left; vocal fremitus unaltered here.

Posteriorly the apices are of equal height on percussion. Below the level of the spine of the eighth dorsal vertebra there is relative dulness on the left side; this is continuous with that previously described in the axilla. In other respects percussion of the back is negative. The upper border of relative dulness does not move with change in position of the patient. Auscultation reveals fair vesicular throughout the right back and on the left back down to the dull area where the vesicular is weak and distant. Pectoral fremitus is slightly weaker on the left side over the same area. Auscultation of the spoken voice is negative behind.

The apex of the heart is best felt in the fourth intercostal space in the nipple line. At the beginning of the examination a pulsation was seen in the second and third interspaces which was forcible enough to be palpated. Absolute heart dulness begins on the fourth rib and extends outward to the apex; on the right it extends to the left sternal line. The relative heart dulness cannot be separated from that obtained over the left lung. The heart sounds are moderately strong and clear. The second pulmonic is reduplicated and accentuated.

Abdomen is on a level with the ribs. It looks natural. The walls are quite resistant, making palpation difficult. Spleen and liver are not felt. Percussion is negative.

Leukocyte count 9256 on July 27, 1904.

Urine examination was negative.

Sputum was examined July 31, 1904. The color was whitish gray. The sputum had a foul odor, like that of "bad" eggs. It separated into three layers. No tubercle bacilli were found; no elastic tissue. Later a hair was found in the sputum.

Fluoroscopic examination shows a light shadow throughout the left side above. Below the level of the eighth dorsal spine and extending to about the level of the eleventh dorsal there is a diffuse dark shadow, as dark as that from the liver. The entire right side is clear. A skiagraph was taken; unfortunately the negative was poor.

From the history and physical examination we are justified in drawing certain conclusions. The most important point is the occurrence of hairs in the sputum. This sign is pathognomonic of dermoid cyst of the mediastinum and occurs necessarily only after a communication has formed between the cyst and a bronchus. A hair obtained from the patient's sputum is shown under the microscope. On comparison with a hair from the patient's head, it is distinctly lighter in color and, if anything, slightly more delicate. Without this the diagnosis would have to remain in doubt, so far as the data thus far obtained from the case are concerned. There are no marked pressure signs such as edema or congestion of superficial veins, as one finds in malignant neoplasms of the mediastinum, nor is there cachexia. The course of the disease is also too protracted for a malignant tumor. Both history and physical signs are compatible with benign tumor of the mediastinum, and the fact that the patient coughs up hairs labels the growth a dermoid cyst. The attacks of "pneumonia" have, I believe, direct connection with the presence of this mass in the thorax, and, in all probability, the patient's belief that the blow received over the heart was the exciting cause of the trouble is to be given some weight. It is likely, but cannot be proven, that rupture of the cyst followed as a result of the trauma. That the cyst would not have ruptured eventually, however, in the absence of the trauma, is not probable. The physical signs are attributable to a tumor of the mediastinum extending towards the left and separated from the thoracic wall by a moderately thin layer of lung tissue. The bronchitis, which is largely on the left side in the upper lobe, doubtless results from irritation by the contents of the cyst.

After a short stay in the medical ward the patient was referred to the surgical clinic where operative treatment was advised. For certain reasons the patient could not receive such treatment at this time, but promised to return later.

There are several things to be done to complete the findings in this case: (1) The sputum must be carefully examined microscopically for the presence of cholesterin crystals, fat droplets, pavement epithelial cells resembling those of the stratum corneum, et cetera; (2) exploratory puncture with a long needle of wide lumen should be made into the area of relative dulness, with minute examination of fluid, if obtained; (3) a satisfactory radiograph is greatly to be desired; and (4) a fuller history and completion of the physical examination by measurement with the saddle tape, inspection for Litten's phenomenon, et cetera, are to be hoped for.

A letter which I have recently received from the patient (October 4, 1904) states that he is feeling well and expects to return in a month or two for operative treatment. I shall hope, therefore, to be able to make a more detailed report of his case in connection with a clinical study of similar cases in the literature, upon which I am at present engaged.

ORIGINAL ABSTRACTS.

MEDICINE.

By GEORGE DOCK, A. M., M. D., D. Sc., Ann Arbor, Michigan.
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AND
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THE ALLEGED PARASITES OF "TICK" OR "SPOTTED" FEVER.

Charles F. Craig (*American Medicine,* December 10, 1904) makes an important communication on this subject. Chowning and Wilson examined a number of patients with a fever prevalent in Bitter Root Valley, Montana, and thought they were justified in concluding it was caused by a minute parasite of the red blood corpuscles. Westbrook confirmed their results, and also Anderson of the United States Public Health and Marine Hospital Service, who thought the parasite was much like the piroplasma bigeminum, the cause of Texas cattle fever. Craig, whose authority in such matters is deservedly great, made special investigations of the blood in various diseases and became convinced that the supposed parasites are nothing but areas in the blood corpuscles devoid of hemoglobin, vacuoles probably. The imperfect and difficult staining described by one of the former writers is simply due to some of the stain getting into the areas. Craig finds similar appearances in various other diseases, and explains Anderson's failure to do so as the result of an insufficient number of trials. Craig also points out the improbabilities of the disease being due to animal parasites. Neither the blood nor urine show such changes as are observed in Texas fever; the blood is rather thicker than normal. Stiles has also been unable to confirm the earlier reports and in general shares Craig's views. G. D.

SURGERY.

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AND
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THE OPERATIVE TREATMENT OF CANCER OF THE BREAST, WITH AN ANALYSIS OF A SERIES OF ONE HUNDRED CONSECUTIVE CASES.

Doctor J. Collins Warren, of Boston, has published a report (*Annals of Surgery* for December) which in all of its details is of great importance to the profession. Only brief mention of the essential points can be made in this review. Three years without return of the disease is classed as a cure. These cases were not selected and the diagnosis in every instance was carefully verified by the microscope, most of them by one observer (Doctor W. F. Whitney). There are twenty-six cures. Two had recurrence, five and nine years after operation, although a second operation was performed ten or fifteen years ago. The patients are living and well. There are four others who have had recurrent growths removed inside of three years and are alive and well. These make thirty cases or nearly one-third of the whole number who are alive and well or who died of other causes than cancer after the three-year limit. The variety of cancer seems to have great bearing on the fatality: there were two cases of colloid cancer and one of Paget's disease, all cured. In forty cases of medullary cancer there were but three cures. A classification is made of the etiology: five cases developed as a secondary process in cysts or inflammations; all but one of these are cures. Three had a history of abscess, sixteen of blow or injury, while only eighteen gave any family history of cancer. The ages at which cancer appeared were between twenty and seventy-nine years; the youngest case cured was aged thirty-one and the oldest seventy-three.

A classification of the clinical course of the disease, he divides for the convenience of study, into three stages. In the first stage the tumor remains in the same condition or nearly the same condition as when first discovered. The second stage is represented by the period of active growth after the discovery, and the glands may or may not be enlarged, but usually they are enlarged. A large number of patients seek advice at this time and most of the operations occur in this stage. The third class includes cases that have increased by extension or metastasis and manifest the change by adherent muscle, skin and fascia, or by lymph glands appearing above the clavicle. The primary focus of the disease may have but slightly changed. Forty-five were operated upon in the first class, of which nineteen were cured; this shows that prompt operation in the early stages will cure forty-two per cent. Rapid growth is against recovery, even when the patient is operated upon in the first stage, rapidity of the growth signifying malignancy. Nineteen were operated upon in the third stage with one cure. Adherence of the skin signifies the spread of the disease. Twenty-three in this class were operated upon with four cures. Seventy-two cases had enlarged axillary glands and seventeen had no involvement. Of the latter, sixty-four per cent were cured. Enlarged glands above the clavicle indicate serious spread of the disease. There were eight cases operated upon in this class; one died the third year after the operation, and one lived eight years after the operation with slight recurrence, but not one was cured.

Brief comments were made on each case and attention was given to the especial points of interest which each one affords. The method of operating is explained in detail. Halstead's operation was employed in many of the earlier operations, but the author has a procedure of his own which he has followed for the past year. It is devised on the principle that removal of the diseased parts is of first importance; anatomy and esthetics have secondary consideration. The mortality shows two deaths from operation, one due to sepsis, the other due to pulmonary embolism from too great activity of the patient soon after operation. The writer is not sure about cancerous infection at the time of operation but heeds the suggestion that it may be possible, taking care not to expose much of the wound at any one time and to cover the exposed parts with gauze. C. G. D.

GYNECOLOGY.

By REUBEN PETERSON, A. B., M. D., Ann Arbor, Michigan.
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AND
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THE LIMITATIONS OF OPERATIVE INTERVENTION IN CANCER OF THE CERVIX UTERI.

Doctor Edward Bulloch, after reviewing (*American Journal of Obstetrics,* December, 1904) the different methods of treatment of this disease and quoting statistics from different German, French, English and American workers, draws the following conclusions:

(1) The present status of operative intervention in cancer of the cervix uteri is that operation is practically useless in cases as they usually come under the notice of the surgeon.

(2) In the operable cases the only procedure offering any reasonable prospect of a permanent cure is the so-called "radical operation" by the abdominal route.

(3) Vaginal hysterectomy is useless as a radical operation, but has a place as a palliative measure.

(4) The upper part of the vagina is deserving of more attention from the standpoint of recurrence, than it has heretofore received.

(5) The most promising outlook for these cases is in early diagnosis, combined with thorough and complete operative measures.

(6) The starvation of the disease by cutting off its blood supply is a palliative measure worthy of trial and a valuable addition to our operative technique. C. L. P.

OBSTETRICS.

By WILLIAM HORACE MORLEY, PH. B., M. D., ANN ARBOR, MICHIGAN.
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ACCOUCHEMENT FORCÉ.

ZINKE, in the *American Journal of Obstetrics* for November, 1904, discusses the "Relative Value of the Means and Methods Employed in Accouchement forcé." After considering at some length the principal methods of accouchement forcé, he presents the following conclusions:

(1) *The graduated steel or vulcanite dilators and the ordinary branched or bladed dilators* are mainly employed for the purpose of dilating the cervix or os preparatory to digital, manual and bag dilatation.

(2) *The bag or hydrostatic dilators,* of which the Champetier de Ribes balloon and its modifications are the most favored, should be employed only when time is not an important element in the case; when the cervix is thoroughly softened, partly or entirely effaced, and an easy introduction of the balloon possible. This form of hystereurysis is contraindicated in central placenta previa and in eclampsia, mild or severe; if, in these conditions, it is determined to empty the uterus, deep cervical incisions, vaginal or abdominal hysterotomy promise the best results for mother and child. To prevent continuation of the cervical incision, a suture may be placed in the upper angle of the wound.

(3) *The manual dilatation of Harris and the bimanual (digital) dilatation of Bonnaire and Edgar.*—A soft and partially obliterated cervix and dilatable os are absolute prerequisites for this variety of uterine dilatation. It is to be preferred to hydrostatic hystereurysis when time constitutes an important element. Under this method the life of the fetus is often lost and, unless great care is observed, sepsis, lacerations, hemorrhage, profound shock and sometimes even death of the mother, may occur.

(4) *Deep cervical incisions and Dührssen's vaginal hysterotomy* are destined to play a permanent and important role in the management of forced labors in the future. Many of the cases now subjected to manual or balloon dilatation will be treated by cervical incisions. It is *the* method in the presence of sepsis of the vagina, because the operation is short in duration and can be performed under the continuous flow of an antiseptic solution. An intact cervix, whether hard, elon-

gated or not, is always an indication for cervical incision. Vaginal hysterotomy is indicated principally when the cervix is the site of malignancy or extensive cicatrization. If there be a palpable difference between passage and passenger, the Cesarean section should be the choice of the operation.

(5) *The indications for the conservative Cesarean* section have been so well defined by myself here and in previous papers that it is needless to repeat them now. Cervical incisions and Dührssen's operation will, however, take its place in many instances, notably in cases of marked prematurity.

(6) *The Bossi and similar metal dilators,* if they are not entirely needless, are certainly very dangerous instruments. From what has been said, it is safe to predict that rapid and complete metal dilatation will never become a popular method; that, sooner or later, it will receive universal condemnation, and thus reach its final and well-deserved destination, "the lumber room of obstetric instruments."

H. S. M'G.

PEDIATRICS.

By ARTHUR DAVID HOLMES, M. D., C. M., DETROIT, MICHIGAN.

CARE OF CHILDREN AFTER THE FIRST YEAR.

DOCTOR ROWLAND G. FREEMAN (*Archives of Pediatrics,* June, 1904) summarizes as follows:

Systematic examinations of all children under our charge should be undertaken at regular intervals and should include the level of the shoulders and hips, the spine, eyes, ears and throat.

During the second year a child should be fed five times a day; the diet at the beginning including only milk, gruel and orange juice, to which latter may be added an egg, soup, bread and butter, and at the end of the year, meat. Beef juice should be used only as a tonic.

During the third year but three meals should be given, with an extra bottle of milk at 10 A. M. The articles of food being continued with the addition of certain vegetables and simple desserts.

After the third year but three meals a day should be given, including the same articles of food, and throughout childhood about one quart of milk should be taken daily and the evening meal should consist only of cereal and milk and bread and butter. Both the variety and amount of food should be carefully restricted.

Children during the second year should sleep twelve hours at night and have a morning and afternoon nap each day, and throughout childhood should continue to sleep twelve hours at night with one nap during each day.

Provision for the exercise of children should be carefully planned. At first by the use of the nursery fence and baby jumper, and later by systematic walks for short distances at a time, and still later by bicycling, horseback riding and tramps in the country. Throughout childhood they should be kept as much as possible out of the close and crowded rooms. When in the house the room should receive ventilation from out of doors and they should be kept in the absolute air several hours each day.

ORTHOPEDICS

By IRA DEAN LOREE, M.D., Ann Arbor, Michigan.
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THE FINAL RESULTS IN TENDON TRANSPLANTATION.

Professor Doctor Albert Hoffa, of Berlin (*American Journal of Orthopedic Surgery,* August, 1904). He reports the work of his assistant, Doctor Koch, who found the pathological changes in the affected muscles of anteropoliomyelitis to be more or less a fatty degeneration, the fatty deposits occurring either in continuity or at intervals, and accompanying this fatty change there was always a regeneration taking place. The affected muscles are variously colored, sometimes rosy-red, sometimes yellowish-white, and with all the intermediate shades. As far as possible only the rosy-red muscles should be used.

Four things are necessary for success:

(1) Perfect asepsis.
(2) Prevention of hemorrhage.
(3) Healthy muscle material.
(4) Union of the tendon under certain tension.

This latter condition should prevail because we know that every muscle possesses a certain amount of elasticity and tone and that these are lost in anteropoliomyelitis. This loss must be restored as far as possible, and it can be attained only by shortening. He emphasizes the statement that this shortening is essential to good results. In the most pronounced cases, where there is total paralysis of a limb, there is no hope of it regaining its function; but success is marked by freeing the patient from the use of apparatus. In other cases, a tendinous fixation of the joint is obtained, which allows of a certain amount of functional activity, making the patient independent of braces. The best results are attained by bringing the muscle back to life.

In the operation he combines what he terms the newer and the older operation: the former that of Nicoladoni; the latter that of Lange, and which consists of periosteal transplantation. Deformity is overcorrected, for, at least, two weeks before tendon grafting, and is held in position by means of plaster-of-Paris. If this is not done it will be impossible to obtain the requisite amount of tension. After the operation the limb is again put in plaster-of-Paris for about six weeks, after which it is put into a splint, for six months, that is more easily removed to allow for massage, electricity, gymnastics and the bath. The best results follow in these cases when the after treatment is longest kept up.

OTOLOGY.

By R. BISHOP CANFIELD, A. B., M. D., Ann Arbor, Michigan.
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SOME POINTS RESPECTING THE SURGICAL ANATOMY OF THE FACIAL NERVE.

Henry A. Alderton, Brooklyn (*Archives of Otology,* December, 1904). The author boiled eighteen temporal bones until tissue was disintegrated and then injected the facial canal with beeswax colored with carmine, and cut horizontal sections. He found one probable and one doubtful dehiscence in the facial canal during its course through the mastoid process and seven marked and two doubtful dehiscences in the canal in the neighborhood of the oval window.

TWO ABSCESSES OF THE TEMPORAL LOBE.

F. Voss, Riga (*Archives of Otology,* December, 1904), reports two cases. *Case I.*—Three and a half weeks after a fall on the head, followed by unconsciousness and hemorrhage from the left ear, this organ began to discharge. Operation revealed an extradural collection of pus without fracture. Autopsy showed an abscess of the temporal lobe the size of a cherry which had penetrated the lateral ventricle. *Case II.*—Patient had had a discharge from the right ear for four years without other symptoms. Suddenly headache, vomiting and fever appeared. A radical mastoid operation was performed one week later. The temporal lobe was punctured. At second puncture a half glass of fetid pus appeared, mixed with gas. An iodoform gauze was inserted, substituted later by a drainage tube. The brain wound was closed seven weeks later. Recovery ensued.

LARYNGOLOGY.

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BRONCHIAL CLEFT CYST.

E. R. Russell (*Journal of Eye, Ear, and Throat Diseases,* Volume IX, Number V) describes an unusual case in a woman aged twenty-eight. The symptoms were a very sore throat and chilly sensations. The left tonsil was inflamed and cheesy material exuded from a crypt. Fluctuation was detected in the postnasal space. On opening, four or five drachms of a very offensive pus escaped. Relief followed. A diagnosis of retrophryngeal abscess of tonsillar origin was made. Later the abscess reformed and was opened lower down. This was repeated four or five times. The abscess was located to the left of the median line in the nasopharyngeal space, and extended in three directions, namely, towards the tonsil; under the skin towards the occiput; and third, down and back towards the cervical vertebræ. No necrosed bone was found. Microscopical examination of some of the tissue lead to a diagnosis of bronchial cleft cyst. The sac was packed twice weekly with iodoform gauze. The sac was too extensive to dissect out and a permanent opening was maintained to give relief.

DERMATOLOGY.

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ICHTHYOSIS.

Bowen (*Journal of Cutaneous Diseases*, December, 1904), under the head of "Hypertrophies," reviewing paper by Menneau on "The Relations of Fetal Ichthyosis to Ichthyosis Vulgaris," says a comparison of the definitions of ichthyosis vulgaris and of fetal ichthyosis given by a majority of authors would convey the impression that they are two absolutely different cutaneous affections. According to them ichthyosis vulgaris may be defined as an affection beginning at a more advanced time of life, characterized by epidermic scales of variable thickness resembling more or less in appearance the scales of fishes, and lasting during the whole period of life. Fetal ichthyosis is a deformity of the skin, present from birth, developed probably about the fourth month of intrauterine life, and characterized by epidermic plaques thickened and cornified, of varying color, covering the whole surface of the body, and separated by more or less deep fissures. There are also malformations of the mouth, nose, ears, and extremities. It usually, but not constantly, leads to the death of the patient.

If we limit ourselves to these definitions, it would seem that the two affections were absolutely different. The paper by Minneau seeks to prove that the differences between the two affections are more apparent than real; that they sometimes produce identical alterations, the difference only being diagnostic characteristics of relatively secondary importance. The term "ichthyosis sebacea" the writer regards as incorrect, and believes the condition, as does Kaposi, to be merely a crusting of the new-born skin with masses of sebum which is easily detached from the skin, and notwithstanding any fancied resemblance to the crusty scales of ichthyosis, should be readily differentiated, and therefore need not be further considered here.

Etiologically ichthyosis vulgaris is apt to occur in families and is hereditary, while fetal ichthyosis is not. Instances, however, are cited where children affected with fetal ichthyosis were born of ichthyotic parents, and also instances of several children in the same family affected in this way. Moreover, heredity is not absolutely constant in ichthyosis vulgaris. It is noted that ichthyosis is endemic in certain places which has not been observed in fetal ichthyosis. Both affections may disappear during the existence of infectious diseases, to reappear later. Pathologically there is no full agreement.

In conclusion, the writer declares that the majority of authors who have written on the subject of fetal ichthyosis have only included under the term cases of great deformity incompatible with life; while the cases which have a longer life have been confounded with the ordinary form. The malformations and arrests of development may appear in both affections after birth, and whatever may be the degree of the affection the same lesion is always seen. Hence ichthyosis fetalis and ichthyosis vulgaris which develops after birth are only degrees of the same pathologic process, a different expression of the same form of hyperkeratosis.

PSYCHIATRY.

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REPORT OF THE EASTERN MICHIGAN ASYLUM.

Doctor Edmund A. Christian, of Pontiac, Michigan ("Report of the Eastern Michigan Asylum for the biennial period ending June 30, 1904"), gives many interesting statistics concerning the admission, treatment and discharge of patients from that large institution. The total number of patients admitted was 459, of which 258 were men and 201 were women. At the close of the period there were 1,228 patients in the institution, of whom 628 were men and 600 women. Seventy-four of these were maintained at private expense and 1,154 as public charges. Application is made for the reception of patients before they are brought to the institution and it is concluded that there has been no increase in the occurrence of insanity within the district during the period.

Ninety-five of the patients had previously been under treatment in this asylum and eighty-two in other asylums. Six were homicidal, 38 suicidal and 139 regarded as dangerous. Seventeen were admitted as nonresidents, having no claim upon the charity of the State. Thirty-one per cent were foreign born, thirteen per cent being Canadians and six per cent Germans. Only forty per cent were the children of native born parents. Ten were classified as not insane. Paresis furnished more than ten per cent of the admissions and this and other forms regarded as preventable constituted seventeen per cent. In nearly one-third there was positive information of the presence of insanity in the immediate family, and in only one-third was there lacking definite assertion as to the presence of insanity among near relatives. Intemperance as an exciting cause is traced to about six per cent and old age approximately to about ten per cent. About one-fifth were admitted while insanity was in its first stage. Twenty-two per cent of all the admissions broke down during adolescent years. Forty-five per cent were between the years of twenty-five and forty-five.

Doctor Christian divides those discharged in apparent possession of their faculties into those restored and those recovered. The restored are those in which re-occurrence of the insanity is to be expected, and in those recovered it is not looked for. In the year 1904 thirteen per cent of the cases admitted were recovered and 15.9% restored. The death rate in an institution of this character is always very high. Of the total number treated in the year 1903 6.6%, in the year 1904 5.4% died. The average age of those dying was a little more than fifty-six years and the average length of residence in the asylum was five years, four months and two days. The longest residence was twenty-five years, seven months and three days, the shortest one day.

Paresis was the cause of over twenty-seven per cent of the entire number of deaths, old age closely follows with over twenty per cent. In describing old age as a cause of death care was taken to give prominence to this factor when the immediate cause showed itself to be only a link in the chain of symptoms constituting senility. Seven per cent died from tuberculosis. Eight deaths were due to epilepsy and ten to the various forms of nephritis.

Doctor Christian says that in treatment more importance than ever is laid upon rest in bed and in feeding with the intention of combating irritability, restlessness, activity and excitement, when these are manifestly the symptoms of diseased processes. The range of nursing has been extended so that a greater number of wards than ever are under continuous night supervision. The doctor places much stress upon the value of outdoor life and employment, not only in the custodial care but in treating the more acute conditions when the latter will permit this. He emphasizes the fact that the value of employment is almost exclusively to the patient and does not consider the patient's productive labor as having very much market value. He emphasizes the value of the asylum training school to the nurse, the patient, the institution and the public at large. The following paragraph is quoted from his report:

"Whatever advance has been made in the medical care of patients finds its chief cause as well as its exemplification in this slow raising of the standard of the asylum attendants. It is the inevitable result of the training school for attendants, with its resulting sense of increased responsibilities, with the more sympathetic cooperation between attendant and physician, with the certainty of tenure of office, with the lengthening of the years of service, and, finally, with the increased maturity in years of those engaged in the work."

THERAPEUTICS.

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ADRENALIN CHLORIDE IN HEMORRHAGE COMPLICATING TYPHOID FEVER.

M. Clayton Thrush, M. D. (*Therapeutic Gazette*, December, 1904), in discussing adrenalin chloride as a remedy for hemorrhage occurring in typhoid fever, says:

(1) Adrenalin chloride is the most powerful hemostatic known and is especially valuable in hemorrhage complicating typhoid fever.

(2) The best results are obtained from this remedy only when the typhoid fever is treated in all respects in the most approved manner.

(3) The remedy depends for its value on the property it possesses of being a vascular stimulant.

(4) The remedy is best administered hypodermically.

(5) Adrenalin administered by mouth has an effect similar to that obtained when the remedy is used hypodermically, but the action is slower.

(6) Adrenalin is indicated in all forms of hemorrhage.

(7) In hemorrhage complicating typhoid fever twenty minim doses of a one to one thousand preparation (the form in which it is usually sold) should be given hypodermically every three hours until the hemorrhage has been controlled, or until twelve hours of such treatment has passed, when the remedy should be continued by mouth in ten minim doses for a period of twenty-four hours.

The usual course of applying ice to the abdomen, of elevating the foot of the bed, and of avoiding the use of fluids is recommended as a valuable adjunct to the treatment described above.

Doctor Thrush describes ten cases of typhoid fever in which hemorrhage occurred and to which treatment with adrenalin chloride was applied. In all these cases the hemorrhage was controlled and in all a final recovery of health was reached.

PATHOLOGY.

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DIRECTOR OF THE PATHOLOGICAL LABORATORY.

THE PROTOZOÖN OF SCARLET FEVER.

Duval (*University of Pennsylvania Medical Bulletin*, November, 1904) makes a preliminary report concerning the microscopic study of cells found in the serum taken from rapidly produced vesicles in the skin of scarlet fever patients. Eighteen cases were studied. Strong ammonia water was used to produce the vesicles, as this was found to produce quickly and without pain a vesicle containing a clear straw-colored serum free from red blood cells and leukocytes. In such serum in five cases of scarlet fever protozoön-like bodies resembling those described by Mallory were found. The bodies were found during the height of the eruption. The majority of the bodies were identical in structure and in form with those described by Mallory as occurring in the skin of scarlet-fever cases. They vary in size from two to eight microns, some of the larger ameboid forms reaching a length of fourteen microns. They present a series of forms with definite structure and stain distinctly a delicate blue with the modified Romanowsky stain. In three of the five cases spherical segmented forms were found. One of the patients, a child aged two years, in whose serum all forms were found in large numbers, died subsequently on the fifth day of the disease. The histological study of the skin derived from autopsy showed numerous foci of the protozoön-like bodies corresponding perfectly with those found in the serum before death. Such bodies were not found in the vesicles produced in the skin of normal individuals, nor were they seen in the serum of artificial vesicles produced on the skin of patients suffering from other exanthemata. A full report is promised later.

EDITORIAL COMMENT.

LIGHT CONCERNING MEDICAL LITERATURE.

THE subject of medical literature received timely consideration in an excellent address delivered by Doctor Hugh T. Patrick before the recent Cincinnati meeting of the Mississippi Valley Medical Association. The discourse, which has just been published, is reproduced elsewhere in this issue, and all physicians who are striving to reach the goal of higher standards for medical thought and practice will be edified by the ideas which the orator promulgates. It is one of the most praiseworthy efforts to lead the children of Israel into the land of promise that has been made in the last quarter century. After paying his respects to the family factotum in an appropriate prelude he delves into the subject of his discourse, which contemplates "The Choice and Use of Medical Literature." Books are accorded proper mede of consideration, but the major portion of the address is dedicated to journals, although the question is modestly approached "with considerable feeling but no confidence." This fact is to be regretted, inasmuch as the physician is admonished not to admit to his presence "a journal that is not perfectly straight and clean," although the orator waived offering a rule for the classification of journals or prescribing a remedy for the improvement of their tone. The advice imparted is excellent so far as it goes, but as no hard and fast line of demarcation between good and bad journals is designated the casual reader may not be able to readily distinguish which is which, and it would seem, therefore, that the orator should have classified medical journals if forsooth he did not wish to specify the really objectionable. The closest scrutiny does not always reveal the deceptive character of this literature, so delicate is the veneer, and consequently some classification should be submitted whereby the chaff may be distinguished from the wheat. This will not be undertaken for the purpose of indicting any editor or publisher but solely to condemn a principle.

* * *

Medical journals may be divided into two classes: (1) Those owned, edited, published, and controlled within the profession, and designated *professional journals;* and (2) Those owned, body and soul, by commercial enterprises, and designated, for convenience and in contradistinction to the other class, *trade journals.* As regards medical worth the two classes are graded from high to low degree. The ethics of the professional journal depends entirely upon the personal equation, and instances might be cited of journals published by doctors in Chicago, Saint Louis, Philadelphia, and elsewhere, the ethical standard of which is far below high water mark. The ethics of the trade journal is *nil,* because it has no significance from the commercial standpoint. The difference between the best and the poorest of this class is merely one of grade, the *principle* of both being the same—wrong. Some are regarded high-class journals—respectable, if you please, the same as some brothels are regarded respectable in contradistinction to the less pretentious, notwithstanding the principle of prostitution is identical in both grades. Trade journals are published primarily to advertise, *in one way or another,* certain products of their promoters, and secondarily to supply enough medical essence to render the dietary palatable. Some are ushered into the medical arena without even the vestige of an editor—as one recently emanating from New York, and purporting to be international in scope; while others, whose publishers are vested with keener business acumen, employ some medical gentleman of more or less prominence or pull at a high salary to jolly the profession along. When it is considered that of the nearly three hundred medical journals published in the United States and Canada over two hundred are trade journals, the ease with which the profession is jollied will be readily appreciated.

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The principle of trade journalism is wrong because a commercial enterprise of this nature is invariably embarked with the mercenary idea. The promoter has no interest in medicine beyond the pecuniary feature, and the journalistic makeshift is conducted according to a policy that will lead the shekels into the pockets of the publisher. While the course pursued may be considered shrewd business practice it certainly will not harmonize with medicoethical practice. The admonition to beware of "advertising almanacs" possibly refers to trade journals, although the specific term is not employed. This class should not even be dignified by the title of almanacs, for they are merely handbills folded in the form of pamphlets with some ingeniously constructed advertising suggestion running between the lines of many of the pages. The profession generously enables the dissemination of this sort of reading matter by contributing subscriptions to defray the expense of issuance. The poor profession is solicited for subscriptions to sustain all kinds of fake schemes, from mining stock to undermining literature, and the susceptibility of some to swallow the bait is indeed wonderful. The expression "papers by underdone doctors," means a great deal. Some doctors are not only underdone medically but morally as well. The latter class will write a paper laudatory of a medicinal product that they have never seen, much less tried in practice. Strange as it may seem there are men galore who will do this sort of thing for a ten-dollar check. It does not require a stretch of imagination to conceive how concerns owning medical journals can utilize this trash with journals granting permission to publish one or more papers in their original department during the year in consideration of being awarded an advertisement. Abstracts of these papers could easily be prepared later and published in the journals issued by the concerns, through the reading of which the physician might be inveigled into prescribing the remedy exploited first in the original paper and afterward in the adroitly worded abstract. What a landslide of artful chicanery the enterprise affords! Of course no unprejudiced person will attempt to deny that there are a few trade journals which are superior from many viewpoints to some professional journals, but this does not affect the contention that the basic principle of the entire trade class is wrong.

* * *

Is it not time to look this matter squarely in the face? In the conflict with quackery there is danger of straining at a gnat and swallowing a camel. Until the profession refrains from complacently allowing mercenary laymen to mold medical opinion the task of dissuading the public from becoming prey to charlatanism would better cease. The profession should first pluck the beam from its own eye before striving to remove the mote from the eyes of the common people. Over two-thirds of the profession are unorganized nationally, and so long as there are "yellow journals of deeper or fainter dye" the prospects for unification seem barren of promise. However, there is a wave of organization abroad in the land and possibly it may achieve higher standards. Let it not be an organization for acquiring political power alone but for elevating the personnel of the profession as well. Let the wing of the profession already organized demonstrate to its confreres without the fold that it is determined to do something for the betterment of the guild. The indifference exhibited by unorganized physicians may not indicate that they are altogether wise, and yet it does not follow that they are entirely foolish. They may, perhaps, have enough sense to know that the cheap claptrap trade sheets upon which they depend for medical lore have as legitimate *basic principle* as the high-class trade journals which are supported by some of the better element in the organized wing. A campaign of good missionary work might be fraught with wholesome effect in remedying the deplorable condition of a house divided against itself. The organization journals that have sprung into existence are painfully passive regarding this matter, and the one that should lead the crusade seems to have been stricken completely dumb. Only one journal of this class deigns to consider questions of medical ethics to any appreciable extent, and that one is content at splitting hairs on the ethics of some chemical product instead of striking at the root of an unmitigated evil.

CONTEMPORARY.

THE CHOICE AND USE OF MEDICAL LITERATURE.

[PRESIDENTIAL ADDRESS OF DOCTOR HUGH T. PATRICK, AS DELIVERED BEFORE THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION AND PUBLISHED IN THE LANCET-CLINIC.]

FROM the beginning, the Mississippi Valley Medical Association has been blessed above other scientific societies with a general friendliness—indeed, a fraternal affection—among its members. Second only to the American Medical Association in size and in geographical extent, second to none in earnest and fruitful work, our Association has retained a sort of family warm-heartedness unique in large bodies. For this we should be thankful. For this your President is peculiarly grateful, for well he knows that to this kindly spirit and to no merit of his own he owes his present honorable position. During his brief incumbency it shall be his great pleasure as well as duty to foster the old friendships and cement the new.

And now, since inexorable by-laws require you to undergo something called an address, I am going to inflict a few desultory remarks about the matter and the manner of our reading.

The choice and use of medical literature will depend first of all upon what the physician tries to be; not upon what he would like to be, not upon what his ideal may be, but upon what he thoughtfully, consistently, persistently strives to be.

Our day-dreams of attainment are much the same, but the daily walk of doctors varies greatly. Most of us have met a doctor who may be called the family factotum. He hobnobs with fussy mothers and puttering fathers. He is greatly interested in grandma's cough, knows just how to wash the baby, has his special poultice and can take off warts. Dropping in to ask about Aunt Em's backache, he stays an hour visiting with the folks. He is a gentle and kindly soul, but his mind is occupied with the trivialities of medicine and domestic chit-chat.

Then there is our old friend who in winter airs his surgical deeds and medical acumen about the drug-store stove and in summer holds a like symposium on the shady side of the street. He knows a good cigar, is a pleasant gentleman and harmless in all things save only the practice of his profession.

We have heard of the affable society doctor who dresses well, talks well, knows the best families, attends receptions and makes social calls. We know and respect the God-fearing church doctor who teaches the Bible class, sings in the choir, gets together the pastor's salary and finances the church debt. The lodge doctor, the sporting doctor and the doctor deep in politics are familiar figures. We know them all. They are of us, members of our honorable guild. With loyalty and affection we take them by the hand. They are good friends and good citizens; but really fine physicians? Not one of them. And not one of them has any real use for good medical literature.

But there is another man: The man we would like to be; the capable man who knows his work and does it; the man up with the van, who can talk face to face with the great in our noble profession. He has enthusiastically striven or doggedly persisted until he is the wise, skillful physician who practices with no uncertain hand, but knows when he is right and knows where he is ignorant. To be what he is and do what he does means familiarity with what others have done and are doing. To this there is no exception. He reads. He selects his literature well and uses it wisely.

The selection of our books is a task as delicate, a duty as significant as is the choice of remedies for our patients. Every book is a prescription for our mental self. And yet who can deny that the clever book-agent puts thousands of volumes upon our shelves? In this day and generation it is the doctor's obligation not only to be able to recognize the good in medical literature, but to know the great and the safe among medical writers. A conscientious physician calls in consultation no unknown man, but, strange to relate, he will blindly follow an author of whom he knows nothing except that he has produced a book.

Another somewhat frequent professional indiscretion, to call it by no harsher name, is the good old student plan of sticking to a text-book. Progress means expansion. The more a man progresses the less prominent is the rôle of the text-book. It is necessary for babes but not meat for strong men. No text-book doctor is an A No. 1 man. The latter needs the treatise, the "system," the cyclopedia, and particularly the monograph.

Of all medical books the monograph is the best—and the worst. As a rule, it is the product of special interest and wise employment of opportunity. In it we often find the rich harvest of many years of loving labor by a great mind. In all probability the author has not only consulted the writings of others, but has acquired a sure judgment in weighing their merits. Unfortunately, sometimes he is an enthusiast without balance, a faddist, a man with a theory, a prejudiced observer, a dealer in sophistry. Then, if in addition he be a positive and clever writer, he may do untold harm. I have now in mind an interesting, attractive book which in the last twelve years has led astray thousands of physicians, and I am sure that the next quarter of a century will not see rooted out the fallacies planted by its brilliant author. Why is this? Because thousands of well-meaning doctors bought the book without knowledge, read it without care, absorbed its tenets without proving and promulgated its dicta without prudence.

If he is to really profit by the precious time spent in reading, the physician must be able to read with discrimination. In medicine there is no such thing as an authority. The critical sense must be keen and ever alert. The reader must learn to be a judge, for the plea of every paragraph is to be adjudicated. And if he feels himself at fault assistance is on every side. I think there is no case in which those who know are more happy to lend a hand than in the selection and interpretation of medical writings.

And next, what of the journals? This is a big question and a hard one; one I approach with considerable feeling but no confidence. Nevertheless, I shall not attempt to dodge it. And since to advise is more human than to confess, to find fault more spontaneous than to praise, to say "don't" easier than to say "do," I venture first to advance a few of the "don'ts" in my mind. But be it understood that these are suggestions purely tentative, the expression of only one of a vast company, and that no remark is meant for criticism of editor, censure of publisher or condemnation of publication *per se.* All is addressed to the reader. I am not talking of foods, but of diet.

Don't admit to your presence a journal that is not perfectly straight and clean. As the first requisites of the good physician are conscientiousness and strictest integrity, so no journal is safe if it be not honest on every page. Humiliating as is the admission, we must confess that there are mercenary medical men writing subsidized articles for the benefit of tradesmen. We may not be able to stop the practice, but for the love of decency let us drop the articles into the waste-basket as soon as received and bar the journals from our table.

Just to illustrate how vigilant we must be, I may state that one medical screed has appeared in different journals as a straight advertisement, an editorial, an "original," a therapeutic hint, a news item and a clinical note. Again, of seven so-called original papers in one journal, four were obviously for ulterior purposes.

A thinly-veiled deception is that of putting amidst scientific matter blatant advertising quoted from *Der Deutsche Medizinische Schurkenstreich* or *La Nation Médicale Trompeuse.* It is simply knavery with German or French sugar coating.

Another sort of debasing journal is the one that pretends, perhaps honestly, to help the physician to success by means other than pure professional excellence. A type of this kind of thing I recently found in an address to the graduating class of a medical school. I have no doubt the orator thought he was advising tact and inculcating practical methods for the management of patrons, the confusion of competitors and the increase of income. As a matter of fact he was teaching those young men deception, subterfuge and meretricious connivance, to take the place of scientific knowledge and manly worth. Concerning the editor who spreads such pestilence I have nothing to say. The doctor who admits it to his library and his mind not only injures himself but is recreant to his trust.

Don't indulge in yellow journals—for such there are, of deeper or fainter dye. The more harmless kinds merely present a sort of pseudo-scientific vaudeville of striking oddities, rare curiosities, marvelous happenings and other side-show monstrosities of the medical world. All of this serves only to excite a passing interest and makes no reader one whit better as scholar or practitioner. The worse kinds, under the cloak of medicine, pander to our appetite for the startling, the scandalous, even the salacious, and appeal to passion and prejudice. They lean strongly to sexual perversion and suggestive gossip. Behind the mask of independent thought they delight in strictures on those high in the profession, and even indulge in dirty inuendo. They start hot discussions on ethics and foment controversies over personal rights, privileges and immunities. And this, God save the mark, is circulated as medical literature because it is read by medical men.

Don't take a journal which is run as an advertising medium, and don't look at it if it is sent to you. Such publications are of two sorts. One kind is issued by some commercial gentleman to assist in selling his wares. In the guise of a scientific periodical it is to all intents and purposes a sort of medical almanac about as wholesome and edifying as the pamphlet for Bonesetter's bitters or the bulletin of Mother Udder's uterine uplifter. The other kind is conducted by a medical man with the dollar mark stamped on his aspirations. The good of the reader is no concern of his. He is after the money of advertisers, all of them. Original communications, editorials, excerpts, correspondence, everything is arranged purely as a bait to induce the gullible to swallow the ads.

Don't read a journal that accepts abortive papers by underdone doctors. There are journals which systematically encourage that sort of thing. Unquestionably, to report cases and write down his opinions is good for any physician. But how about the reader? When the cases are incompletely studied, the writer ignorant or narrow, his conclusions lacking foundation and his judgment immature, the contribution is not only valueless, it is injurious. Smooth is the descent that leads to Avernus and easy the downward road of this damning third-rate literature. It is light and easy reading, but begets self-satisfaction, blunts the critical sense, lulls ambition, dulls observation, stunts mental growth, and before he knows it the reader is found on a low plane of thought and practice—no higher than the twaddle he reads.

Don't waste time on journals abounding in short cuts. They are an abomination unto the mind, a snare for the unwary, and their name is legion. A hint or two will indicate the sort I mean.

Purporting to be practical and immediately helpful, some journals make a specialty of what may be called recipes for disease. And they are very alluring. Instead of learning all about pneumonia, its nature, course, variations and complications; what methods of treatment have been tried and abandoned and what has been the experience of those seeing hundreds of cases, it is so much easier to take some fellow's or some journal's statement that a peculiar poultice or ambitious alkaloid cures the disease. Stamped deep on my feelings is a paper on dyspepsia in a journal of great vogue. With no statement as to what dyspepsia may be, with no word as to diagnosis, with no allusion to pathology, no mention of gastroptosis, dilatation, hyperacidity, or motor power, and no hint of test-meal or examination of stomach contents, the author proceeds to advise the administeration of seven different drugs. In spite of the multifarious remedies, such advice simplifies practice to a degree. It is no task simply to remember to give this tonic for appetite, that capsule for digestion, this granule for pain, those drops for nausea, one pill for constipation, the other for diarrhea, and the powder for flatulence. It is a short cut, but it leads to disaster.

In this same category belong the medical magazines that make a leader of questions and answers—a department modeled on the *Ladies' Fireside Guide* where anxious inquiries go off at half-cock and the answers pop back as prompt and empty as echoes. A very little reflection will show not only the utter futility of this kind of reading, but how it prevents development by curtailing wholesome mental effort.

Then there is the petty journal corresponding to the family factotum above mentioned. Its short cut is simply the avoidance of the great and profound in medicine. Ignoring such fundamental things as anatomy, physiology and pathology, oblivious alike to basic principles and the best accumulated experience, it propagates a sort of family confab on the various superficialities of practice. How to bring out the eruption of measles; what is good for hiccough; the best liniment for sprains; these are cheerfully aired in numerous columns. What do you say to the parturient woman when she grows impatient? What is your favorite catarrh snuff? In the treatment of "threatened" appendicitis should aconite be given the first day and veratrum the second, or *vice versa?* Upon questions such as these the editor and his writing readers expend great energy, priceless time and endless ink. With great zest the contributors, as Charles Lamb says, encourage one another in mediocrity. I carefully went through one hundred fifteen pages of such a penny-wise pound-foolish publication and found just six pages of good stuff. And yet that journal has an enormous circulation—to the great renown of the publishers and the great discredit of the medical profession.

Don't pay much attention to columns of formulæ, notes on treatment, therapeutic hints, brief paragraphs on recent discoveries, and items on new drugs. Pass over abstracts in which the process of condensation has squeezed the life out of the matter and skip society reports so meagre as to amount to mere personal mention. Most of such matter is garbled at the best, has no educational value, and even when a bit of it has virtue, is pretty sure to just slip through the otic tunnel—in one ear and out of the other.

From the foregoing negatives a few positives may readily be inferred. As we are to buy only the best books, so let us take only high-class medical periodicals. And then let us read them well. If there are many poor journals there is much poor reading done—reading that is casual, unsystematic, careless, superficial, cursory, profitless. We have three sources of information and inspiration—personal experience, personal contact with colleagues, and reading. The first may be limited, the second unsatisfactory, but the last offers to all a most bountiful supply of both inspiration and knowledge. Then let us read up and not down.

There is a certain comfortable ease in reading what we already understand. We may gratify our natural craving for approval by reveling in nice little papers which repeat what we have been saying for years. To tickle our vanity by reading papers so poor that they show the author to be more ignorant than ourselves is a pleasing process. Sometimes we feel quite luxuriously virtuous when reading a medical journal purely for entertainment and mental relaxation. None of these things should be. One and all they create a slovenly habit of mind. They are destructive of good method and in the end incapacitate us for good work.

Here I must notice an objection or complaint that we have all heard and most of us have made: "I have not time to read." It isn't true. The apportionment of time is not a matter of necessity, but of choice. What do I consider of the greater importance? What do I like and dislike? What do I *choose* to do? These are the determining questions. And in the modern physician's life there is precious little paramount to study. It *pays* to read. Besides the pleasure of knowledge and the power that knowledge gives, besides the gratifying sense of achievement and the satisfaction of progress toward a goal, it pays in dollars. In conversation with the busiest, the greatest and the most successful of our colleagues I have often been astonished at the amount of reading they do and how they rely upon it. Very, very often good reading makes the difference between $5.00 and $25.00 for an examination, between $50.00 and $500.00 for an operation.

And now, if I may be allowed four little hints as to the manner of reading, I shall have finished.

One excellent way to use medical literature is systematically to get up one subject well; to investigate it thoroughly; to trace its history and follow its development; to scrutinize diverse observations, review conflicting opinions and weigh different conclusions. Having once mastered the thing, it will be surprisingly easy to follow it through the succeeding years, for the annual increment to any given subject in medicine is astonishingly small. After one topic is exhausted another may be attacked, and so onward.

This method easily falls in with a second good one, namely, to read up fully on cases in hand. Note that I say *fully*. Hastily to look up an ointment for eczema or consult a text-book or two on the diagnosis of iritis may be one of the exigencies of practice; it is not reading. Likewise hunting up a remedy for an obscure case may possibly be a necessary makeshift, but generally it does the patient little good and the doctor less. We should read for a perfect understanding of the case, which means a complete comprehension of the subject. No case can properly be considered alone. It is always in relation to variant cases under diverse circumstances. For no patient can there be a paragraph explanation and recipe treatment.

Now, these two plans of reading naturally lead us to a third—reading to write. Of course, this plan is good only when the writer compels himself to produce really good stuff. This proviso fulfilled, I know of nothing more wholesome than the writing of papers and the reading of them where others may pass judgment. If the first two plans have been well carreid out it is reasonably certain that this one will not miscarry. The man who has excellently well worked up any subject or any case of any abnormal condition, is not only well prepared for the next one of kind, but he is in a position to tell others something they don't know.

Pursuance of these three plans of reading will almost invariably produce a most desirable habit in practice, namely, the keeping of case records. The virtues of this practice are many. Two of them are that it stimulates reading and enhances its value. Accurate comparison of our experience with that of others not only serves to impress the facts, but ripens knowledge into wisdom.

The fourth and last suggestion for medical reading is really but a summary of the other three. It is that we acquire the mental attitude, or aptitude, or habit, of *reading for reproduction.* To be a student is not enough. We must be effective students—student soldiers, if you please, preparing for action. There is a vast difference between the acquisition of knowledge as a mere accomplishment and as a means of accomplishment. It is well for us doctors to regard our store of knowledge not as simply an interesting museum of Nature's wonders marvelous to contemplate, but rather as an armamentarium, an orderly array of goodly weapons ready for instant use.

MEDICAL NEWS.

THE PREVENTION OF SMALLPOX.

DOCTOR BENJAMIN LEE, secretary of the Pennsylvania State Board of Health, points out in his annual report, just submitted, that during the year ending November 1, there were reported in the State 5,172 cases of smallpox, with 521 deaths, which is in marked contrast with the experience of the German army, in which, since vaccination and revaccination were made compulsory thirty years ago, there has not been a single death from smallpox. In the city of Philadelphia, as a result of an active vaccination crusade, the number of cases of smallpox has been reduced from 396 in December, 1903, to 26 in June, 1904, and in Pittsburg from 537 cases in October, 1903, to 15 in March, 1904. At the present time there are only 42 cases throughout the entire State. In this connection is suggested the advisability of directing attention to the admonition of Doctor William Jenner regarding vaccination one hundred years ago. It was published in *The Medical and Physical Journal* for August, 1804: "A general knowledge of the subject is not sufficient to enable or warrant a person to practice vaccine inoculation; he should possess a particular knowledge; and that which I would wish strongly to inculcate, as the great foundation of the whole, is an intimate acquaintance with the character of the true and genuine vaccine pock. The spurious pock would then be readily detected, whatever form it might assume, and errors known no more."

MINOR INTELLIGENCE.

Doctor Louis Weigel, the prominent electrotherapeutist, of Buffalo, recently sustained the loss of his right hand and three fingers of the left hand as the result of disease contracted from the prolonged handling of *x*-ray apparatus.

An unnamed philanthropist has bequeathed one hundred thousand dollars to the University of Leipzig for the endowment of a chair of medical history. It is the intention of the authorities of the institution to found a historical museum in order that the study of the subject may be facilitated.

Professor Koch, who resigned on October 1 from the directorship of the Berlin University Institute of Infectious Diseases, has been succeeded by Professor Gaffky. The city of Giessen, until recently the home of Professor Gaffky, has conferred honorary citizenship upon him in recognition of his services in public health matters during his residence there.

Doctors Bryars and Smith of Toronto were recently the defendants in a suit instituted by an insane woman, who had been liberated by the authorities as cured, to recover damages to the extent of $10,000, her contention being that she had been unjustly detained in an asylum at the doctors' instance. The jury returned a verdict in favor of the defendants.

According to report, the Liverpool School of Tropical Medicine is organizing an expedition to investigate yellow fever in the vicinity of the Amazon. The last expedition, which was composed of Doctor Walter Myers and Doctor Herbert Durham, experienced a disastrous termination, both of these investigators being stricken with the malady and the former suffering death. The present expedition will probably start at the beginning of the year.

The Pullman Company is preparing to install, in connection with its system, coaches designed especially for the transportation of sick passengers. Although the idea is not new it has never as yet been subjected to practical test. The plan, conceived by Doctor C. W. P. Brook, had its inception as far back as 1893, and contemplated filling cars with compartments, containing every convenience for the care of the sick, and for the accommodation of attendants.

Rumor says that certain Chicago hospitals have engaged in the commission business to the extent of disposing of the bodies of persons who succumb in the institutions. The insinuation is made that the authorities cater to favorite undertakers, although no direct charge has been entered. The accusation emanates from vital statistician of the Health Department, Doctor Behm, as well as from a delegation of undertakers which called upon the Council Health Committee. The information disclosed has led to the recommendation of an ordinance calculated to prevent the disreputable practice.

THE recent report of the Board of Health of the Philippine Islands discloses the fact that there are over four thousand insane persons in the various provinces. Of these two thousand one hundred sixty-four are males and one thousand eight hundred fifty-one are females. These figures show that accommodations for at least five thousand patients are requried.

THE Saint Louis Medical Society enjoys a membership of four hundred twenty-seven. At the annual meeting held on December 17, 1904, the following officers were elected for the ensuing year: President, Doctor Frank L. Henderson; vicepresident, Doctor John C. Morfit; recording secretary, Doctor Thomas A. Hopkins; corresponding secretary, Doctor Charles J. Orr; treasurer, Doctor R. M. King; member of the board of censors, Doctor B. M. Hypes.

A STATISTICAL report of the vocations pursued by the living graduates of Yale University shows that seven per cent are ministers, eight per cent physicians, and thirty per cent lawyers. The physicians seem to have succeeded much better than the lawyers or ministers, only one in ten of the former having abandoned professional work to engage in business, whereas one-fourth of those who elected the other learned professions have changed to finance or teaching.

THE New York Academy of Medicine elected the following officers at the annual meeting of December 15, 1904: President, Charles L. Dana; vicepresident, T. Mitchell Prudden; trustee, Abraham Jacobi; treasurer of board of trustees, Reginald H. Sayre; committee on admissions, William C. Lusk; committee on library, L. Emmet Holt; delegates to State Medical Society, David Bovaird, Jr., James Ewing, Charles L. Gibson, Homer W. Gibney, and Edward L. Keyes, Jr.

ACCORDING to figures compiled by the Census Bureau the divorce evil is enjoying a gradual growth in the United States. In 1900 statistics revealed the condition that of every one thousand employed men, five were divorced; while in 1890 but four of every one thousand men had been granted separation from their wives. It is a remarkable but distressing fact that clergymen, teachers and college professors are included in the divorce renderings, although the tendency for men in these calling to divorce is much less marked of late than in previous years.

DANIEL TELLIER, a deaf mute of Kalamazoo, Michigan, is the inventor of a door signal for announcing callers to persons who cannot hear the ordinary door bell. The device consists of a metallic box, enclosing two iron balls, and is constructed in such a manner that the bottom falls out at the instance of a spring connected with a button outside. Touch the button and the bottom springs open, allowing the balls to drop to the floor and roll about. The inventor says that in the case of a deaf mute attention is not attracted nor the nerves affected so much by the jar of the dropping balls as by their rolling across the floor.

RECENT LITERATURE.

REVIEWS.

INTERNATIONAL CLINICS.*

THE present volume fully keeps up the standard of this unique series. About one-third of the volume is devoted to syphilis, and a most interesting and practical series of articles cover many phases of that important subject. Under "Treatment" may be mentioned "The Treatment of the Digestive Disturbances Occurring in Pulmonary Tuberculosis," by Lawrason Brown, and an up-to-date article on "The Treatment of Diabetes Mellitus," by T. Stuart Hart, while "Medicine," "Surgery" and "Gynecology" show each several brief and useful papers and "Neurology" one, on "Paralysis Agitans," by F. W. Langdon.

Like the preceding volumes, this one is well and copiously illustrated. Few periodicals are as valuable to the practicing physician as this one, and Doctor Kelly is again to be thanked for keeping up the standard so well.

*A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. Edited by A. O. J. Kelly, A. M., M. D., Volume III. Fourteenth Series: 1904. Philadelphia: J. B. Lippincott Company.

THE PRACTICAL MEDICINE SERIES OF YEAR BOOKS.*

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*Comprising Ten Volumes on the Year's Progress in Medicine and Surgery, under the general editorial charge of Gustavus P. Head, M. D., Professor of Laryngology and Rhinology in the Chicago Post-Graduate Medical School. Volume VIII *Materia Medica,* by George F. Butler, M. D., and George S. Browning, M. D.; *Preventive Medicine,* by Henry B. Favill, M. D.; *Climatology,* by Norman Bridge, M. D.; *Suggestive Therapeutics,* by Daniel R. Brower, M. D.; *Forensic Medicine,* by Harold N. Moyer, M. D. 344 pages. Cloth, $1.00. The Year Book Publishers, Chicago.

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ORIGINAL ARTICLES.

MEMOIRS.

THE PRESENT RELATION OF OTOLOGY TO THE PRACTICE OF GENERAL MEDICINE.*

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To return to one's Alma Mater is always a very great pleasure. To return for the purpose of serving her is a very great honor. To address the University of Michigan Medical Society is a privilege for which I wish to express my cordial thanks and hearty appreciation.

The advance in scientific otology during the past few years, and especially during the past five years, has been so great that it has seemed to me not amiss to choose as the title for this short paper "The Present Relationship of Otology to the Practice of General Medicine," with especial reference to the knowledge upon this subject which should be commanded by the well-grounded general practitioner, and this too because the great majority of the members of the graduating classes of the medical school will enter the field of general practice.

Previous to the birth of modern otology other fields of medicine and surgery had been both rapidly and successfully developed either because their importance was more clearly understood or because they were more interesting or more promising. In the field of ophthalmology so long associated in practice with otology, for instance, the labors of the specialist had been repaid by most gratifying results. It had long been known that if a patient suffered from cataract, his sight might be restored to him, but until recently it has been conceded that if he had lost his hearing from any cause whatsoever he was incurably diseased.

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*An Address before the UNIVERSITY OF MICHIGAN MEDICAL SOCIETY, December 16, 1904.

It is due to the efforts of men like Gruber and Politzer of Vienna, and of Blake and Green and Gruening of this country that the etiology, pathology and successful treatment of disease of the ear have become understood, and it has become known that correspondingly as much can be done for patients suffering from diseases of the ear as for those suffering from diseases of other parts of the body. The profession understands that there is more to otology than the perfunctory use of the Politzer air bag and the middle ear syringe. It recognizes that it is a field of medicine to become acquainted with which requires years of study and diligent application. Otology has, then, taken a merited position as a special branch of surgery.

Since equally dangerous with the half-baked specialist is the general practitioner unequipped with a fair working knowledge of the specialties, it becomes the duty of every physician, no matter whether he be a practitioner of general medicine or of some one of its special branches, to recognize that diseases of the ear bear a most intimate relationship to the so-called general medical and surgical diseases; that the ear is much more frequently implicated in a general disease and is more often the most important feature of the case than is usually understood.

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The ear is generally the organ least suspected by the physician searching for the probable cause of a train of symptoms. Unless the patient has pain in the ear, the examination of that organ is usually omitted, the physician not realizing that it may be participating to a very marked degree, to the extent, for instance, that entirely without external evidence of its existence, an ear disease may be the cause of a fatal complication. Therefore, the well qualified general practitioner should be able to recognize the difference between the healthy and the diseased ear and should possess sufficient technique in aural examination to determine whether or not the ear should be taken into account as a casual factor or a complication of the disease he is studying.

Throughout the ranks of the profession, it must be admitted that the chief causes of ear disease are not sufficiently appreciated. Signs and symptoms that should attract the attention of the intelligent layman pass unnoticed by the general practitioner. If the physician can start in with the knowledge that practically all middle ear diseases, and they are the ones by far the most common and are those with which he is most intimately concerned, seek their casual factor in pathological conditions of the nose and throat, and that those conditions may exist for years before the appearance of the aural symptoms to which they give rise, he has informed himself upon one of the most important points in the study of otology, for middle ear diseases, whether they be catarrhal or suppurative, are caused as a rule by those hypertrophic nasopharyngeal conditions found in the great majority of Americans living in this climate. A thorough knowledge of the pathological importance of these adenoid hypertrophies is most important, as they act disastrously in several ways, mechanically by their presence to prevent free nasal respiration, to render impossible the ventilation of the middle ear and so to set up a catarrhal condition of the tympanum which may exhibit itself early as an acute middle ear catarrh of childhood, or later as a chronic condition of adult life which destroys the hearing years after its cause has atrophied into insignificance. Again, they act as the chief factor in causing the head colds of childhood with their certain bad effect upon the ear. Or, they set up a chronic congestion of the nasopharynx whose blood supply is in such intimate relationship with that of the internal ear that a congestion of the former leads to a venous engorgement of the latter, a condition most favorable to pathological change in the labyrinth and irremediable destruction of hearing. Finally they become a foci of chronic suppuration which await only the acute infection of the head cold to set up a purulent otorrhea, with its long list of possible complications, of mastoid disease, cerebral infection and pyemia. Examination of large numbers of aural patients teaches the observer that the great majority of all cases of deafness during childhood and later in adult life can be traced directly or indirectly to such a cause. The area of hypertrophy itself, in order to affect disastrously the function of an ear, need by no means be large enough to cause those symptoms of dullness of expression, mouth-breathing, et cetera, associated so commonly in the mind of the physician with the presence of adenoids. If advantageously situated near the pharyngeal opening of the Eustachian tube, a growth smaller than the end of the little finger is quite sufficient. Oftentimes, a careful examination of the ears and test of hearing is necessary to inform the physician definitely that the ear is affected by a condition otherwise so insignificant. Acquaintance with such facts is of the utmost importance to the general practitioner, who sees the patient oftentimes years before he would be led to consult the otologist, and while he is still in a condition to make a complete recovery from an infection of which he, at the time, may be unconscious but which later is most likely to have a disastrous effect upon such an important function as that of hearing. This unique opportunity of seeing his patients so long before the appearance of his symptoms is of the greatest value both to physician and patient, and is one to take advantage of which is clearly the duty of the physician. Such prophylaxis against aural disease is more important than the treatment of the disease after it has once started, for to prevent impairment of hearing from such a cause is a much simpler thing than to cause to return to the normal a hearing power once reduced. It is the duty, then, of the general practitioner to be on the lookout for such nasopharyngeal hypertrophies. It is well within the truth to say that proper treatment at such times will prevent fully fifty per cent of the deafness of middle life. The value to society of an intelligent understanding of this fact cannot be overestimated. It calls into consideration the important question of municipal examination of all school children. Example in this line has been set by the ophthalmologist of certain of our cities and states. Such examinations naturally should include not only the examination of eyes and ears but also of the physical condition of the children and carried out by trained observers would confer upon the community blessings not to be calculated.

Again, in connection with the acute exanthemas—measles, scarlet fever, and diphtheria—the general practitioner has need of a working knowledge of otology. He is well acquainted with the fact that during an epidemic of one of these diseases the children of one family are always affected, while those of another always escape; that one child of a family always, as they say, takes everything, as it makes its rounds, while it's brother or sister never does; and again, that with each attack one child will have a running ear while the other never will. The reason for this is not far to seek and lies in the fact that it is the child with the nasopharngeal hypertrophy who generally contracts the disease, and it is always the one to get the running ear whose adenoid is the most diseased or lies in the neighborhood of the Eustachian tube.

During the attack of one of these acute diseases it becomes a most urgent duty daily and carefully to examine the ears for the first sign of their implication. In these cases, while the ear generally remains unsuspected, it is an organ very generally seriously affected. The practitioner should then be able to recognize the earliest signs of infection and to take steps to prevent its spread, for to allow an ear to fill with pus and to rupture is the grossest negligence. The infection is often so virulent that not only may the tympanic structures be destroyed but the labyrinth also invaded before the tympanic membrane ruptures. Here eternal vigilance is the watchword of success.

How exceedingly important it is for the physician to ascertain early in his examination the exact condition of the ear, not only in the acute exanthemas but also in all the diseases of childhood, is shown by the fact that not only are ear complications exceedingly common but that the ear condition may be the sole cause of a very alarming train of symptoms. The young child with a temperature of 106°, delirium, convulsions, and even coma, whose condition is cause for gravest alarm, may be suffering from a meningitis or he may have simply an acute ear inflammation. The life of the patient and the reputation of his physician may rest upon the latter's ability to make this differential diagnosis. Ear diseases of childhood are important not only in themselves but because they cause other serious diseases in parts of the body quite remote from the seat of the original disease. For instance, it cannot be denied that not all the diarrheas of childhood are due to pathological conditions of the intestinal canal, for some of them are due solely to serous or suppurative diseases of the ear, and in such cases the most careful attention to diet, hygiene, et cetera, avails nothing until the ear condition is improved. The importance of this fact has been pointed out by internist and general practitioner as well as by the otologist, for Pomeroy and Dock have had referred to them children who had been ailing for months apparently from nothing more than intestinal disease whose condition arose from disease of the ear, which instances are sufficient evidence for the general practitioner that apparently slight unimportant acute ear conditions which have never caused symptoms referable to the ear may be enough to occasion disease quite out of proportion to the original cause.

It is not only to the diseases of childhood that diseases of the ear bear an intimate relation, for there are many diseases of adult life with which they are in an interdependance to a degree not sufficiently recognized. In this connection, one may mention tuberculosis as a disease in the course of which the ear may become seriously involved, and one in which the general practitioner is particularly interested, as the ear may be practically destroyed before the appearance of symptoms referable to it, or even of serious impairment of hearing. If the ear is to be saved, it must be due generally to his early examination and diagnosis. Again, during the course of specific disease, the ear may be most insidiously affected, for which, during the course of his treatment of the general disease, the practitioner should be constantly on the watch. Indeed, the constitutional diseases with which he is continually brought in contact are ones having aural complications, for the early observance of which he is chiefly responsible.

The significance of simple gathering in the ear, which, as one frequently hears, has run its course, is almost healed but still discharges somewhat, must be understood by the physician who knows that from such an apparently healing process a fatal general infection may follow.

While it is important for the physician to recognize that disease may attack the ear and to diagnose it when it appears, it is but slightly less important for him to be able to ascertain definitely by inspection that an ear disease has existed, has subsided, and has been forgotten, for one has but to remember the anatomical relationship of the ear and brain, separated as they are by a layer of bone, oftentimes no thicker than a sheet of paper, frequently perforated, to believe that a large per cent of purulent diseases of the brain substance may arise from a simple gathering in the ear, and that possibly far in the past. Inasmuch as in the absence of a probable etiological factor the majority of such cerebral diseases cannot be diagnosed, the necessity of accurate knowledge upon such a point, especially to the general practitioner, who is usually the first to see the case, is vital.

The practitioner should, then, appreciate the necessity of prophylaxis in its broadest sense against aural disease, the frequency and danger of ear complications, should be able to recognize, and what is equally important, remember to search for ear diseases. He should in addition be able to institute proper treatment for certain conditions. He should know the indication for timely incision of the tympanic membrane and be able to make it. He should remember, however, that the function of the ear is to hear and that the preservation and restoration of that function belongs, by reason of his education and training, to the otologist. To furnish himself with a Politzer air bag and an ear syringe and therewith to treat ear cases which he has neither time nor opportunity properly to investigate is to retain the case until hope for improvement is past. For him to undertake aural surgery is to expose himself and his patient to unnecessary risk, for, under ordinary circumstances, it is not his duty to operate upon that organ which Doctor Oliver Wendell Holmes has described as bounded upon one side by life and upon three sides by death.

Scientific medicine and surgery in all its branches is making such tremendous advance, the sum total of medical knowledge is increasing with such rapidity that it is quite impossible for any man no matter what his ability or his diligence to inform himself accurately in all lines. Specialization has long been a necessity and only by specialization can medical advance continue. The practitioner of general medicine himself has become a specialist, practicing in the broadest of all fields, which comes into most intimate relationship with all other fields. He is the most valuable man in the profession, but like other specialists, he must limit his practice. He can no longer treat every case that comes to him, but must in the best interests of his patient and himself refer those cases outside his specialty to physicians who by reason of their training have in certain lines acquired a skill which he does not possess.

TECHNIQUE OF OPERATION FOR APPENDICITIS.*

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THE first step in technique is the preparation of the patient. If the bowels have been freely moved further movement is not necessary. If they are obstructed attempts at movement will be futile until after operation for relief of the obstruction. The field of the disease must be carefully surveyed by palpation, and the point of fluctuation, if it exists, determined. Then the skin of the abdomen over the field of operation must be shaved and cleaned with bichloride solution one to one thousand. Incision must be made longe enough to give easy access to the diseased structure which the surgeon feels through the abdominal wall. Skin and fascia may be divided by one sweep with knife or stroke with scissors. Then the muscles may be cut through or they may be separated through their fibers until the peritoneum is reached. This can be cut with scissors, but often the inflamed appendix or its abscess will be adherent to it and it will be opened with handle of scalpel, point of scissors, or exploring finger of the surgeon. Pus or other fluid will now be evacuated. A finger should be inserted to make gentle search for the appendix in case that organ does not protrude through wound.

The ambition of the surgeon should be to remove the appendix by instrumentation and to keep the finger out of the peritoneum lest that organ become unavoidably infected. It is surprising what tactile sense, through instruments—forceps, can be disclosed and how little danger

*Read at the Detroit meeting of the FIRST COUNCILOR DISTRICT MEDICAL SOCIETY.

there is of tearing tissues already fragile by disease. And, when the appendix does not readily yield itself to forceps or finger and pus or other fluid has come away, leave the appendix to its own devices. The case should not be jeopardized by hazard thrusts and pulls to find a *corpus delichtu* which has done its worst. The wound, if drained, will take care of a rotten, reluctant appendix. Concretions must be removed, if found in the appendix or abscess. Now, separate the appendix and its mesoappendix from the cecum. A needle should be armed with double ligature of silk, linen, or catgut and thrust around the mesoappendix close to the cecum. Then free the needle and tie first the ligature which encircles the appendix. The bother to make a cuff or cut a groove or otherwise trifle with a tight, firm tie-off of appendix from the cecum is not necessary. Then cut appendix through close to knot and with other ligature tie the mesoappendix snug and strong to make sure against slip or hemorrhage from the meso through separating the morbid appendix from the patient. If there is pus insert a short drainage tube one and one-half inches long, which will do better than a longer one. It should just reach through the abdominal wall and is a menace if used too long. Let me assure you, members of this First Councilor District Medical Society, that I am speaking of my own methods without desire to foist them on you. This is no place for pedantry.

I close the abdominal wound with big free stitches, each of which embraces the whole abdominal wall from skin to peritoneum, and I tie each stitch so that there is no tissue necrosis to make easy the path of hernia. With the seriatim layer-after-layer method of suturing I have no sympathy, deeming it needless, and therefore meddlesome.

The odious postoperation hernias are due to two things—too tight and too much suturing and the abdominal bandage. In my clinic at the Emergency Hospital we have abandoned the abdominal binder in securing wounds in the abdomen, either for appendicitis or any other purpose, and in its place have substituted short adhesive straps which hold the surface dressings and do not interfere with the autonomy of the abdominal muscles.

The place to operate on a case of appendicitis is where you find it. The hospital fetish is largely to blame for the mortality of the disease. A ride in an ambulance and on a train; carriage on stretcher through halls and wards and up and down elevators to the ghastly, glaring, white walls of the operating room has no encouraging moral effect on a patient, who must undergo a serious surgical procedure for the cure of dangerous disease. There has been enough tribute to the tyrant sepsis, and other factors entering the treatment of appendicitis must have consideration. A reasonable, fair-minded master of surgical art will take the diseased appendix from the patient and restore him to health and usefulness just as quickly in the home as in the hospital, and with much less fuss and feathers.

PERNICIOUS ANEMIA.*

BY EMMET H. POMEROY, M. D., HIGHLAND PARK, ILLINOIS.

ON attempting the expression of a few thoughts on the subject of pernicious anemia, I cannot offer anything new, and nothing original. In searching the literature of this subject, there appears wonderful change in opinions regarding the etiology of the disease with but very little change in prognosis, and practically no advancement in treatment since Addison published his famous monograph on the subject about half a century ago. Now, as then, pernicious anemia can be tersely described as a progressive anemia without any discoverable cause. The term etiology seems a misplaced expression in writing of a disease without a discoverable cause, and yet probably more has been written on the etiology of pernicious anemia than about any other feature of the disease.

The advancement in the scientific view of the etiology since the time of Addison, has been more in the elimination of cases from the category of pernicious anemia, that is to say, a disease which had no discoverable cause at that time does not remain so now, and is no longer classed as pernicious anemia.

An anemia caused by the depressing influence of anchylostomum was formerly called pernicious anemia, but when it was discovered that the disease was curable by the removal of the anchylostomum, then it was no longer called pernicious anemia. The same process of elimination was followed regarding the minute but chronic oozing of blood from the breaking down of gastric or enteric ulcer, there being a discoverable cause for the progressive anemia. Regarding the recognition of the disease, it can be truthfully said that the diagnosis is beset with more and more difficulties. A very few years ago, we were told by some of the more advanced students, that this form of anemia could be readily diagnosed by the microscope; that the microscopic examination showing a marked diminution of the number of blood corpuscles would show anemia; that the staining of films showing the nucleated red blood corpuscles would limit the disease, either to pernicious anemia or leukemia; and that the staining of the leucocytes by the Ehrlich-Biondi triple stain would readily show the characteristic features of leukemia if such would be present. This simplicity in diagnosis has been entirely shattered by the published observation of scores of hemologists and can be almost daily belied in our own practice.

Sex seems to play an unimportant part as an influence, some authors stating that the female largely predominates, while others state that if those cases be eliminated which seem to have their exciting cause or beginning as a result of pregnancy, the males would largely predominate.

It is believed that many cases of chlorosis (and what is by some termed fecal anemia) so closely resemble pernicious anemia in the physical qualities of the blood as to have led many of these cases to be incorrectly named pernicious anemia. Many cases are ascribed to overwork and underfeeding, but the disease is by no means confined to the very poor, and, on the contrary, is probably met with more frequently among the more prosperous class of people. Probably the one sympton which is the most constant in the early stages of pernicious anemia is gastro-intestinal disturbance. By some observers it has been stated that pernicious anemia never exists without atrophy of the gastric glands, and atrophy of the glands is ascribed as the invariable cause of pernicious anemia. This is met by the argument that atrophy of the gastric glands exists in eighty per cent of all cases of cancer of the breast and in all cases of cancer of the stomach, while progressive pernicious anemia is rarely if ever found associated with cancer of the breast and seldom with cancer of the stomach.

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*Read at a meeting of the LAKE COUNTY (Chicago) MEDICAL SOCIETY held at Waukegan, Illinois, February 7, 1905.

Howsoever much a disease of the gravity of pernicious anemia may seem to be without a discoverable cause, we yet have ground for the hope that some of the excellent work being done by hematologists of our day may disperse the cloud so long concealing the etiology of this disease. Already there are theories based not only upon good reasoning but also upon the results of much excellent work and careful observation.

A recent Shattuck lecture in the Harvard Medical School, delivered by Billings,[1] of Chicago, is one of the most valuable of recent contributions. In this lecture Billings discusses the changes in the spinal cord in pernicious anemia, and incidently refers to the work of other observers of the relationship of blood and nerve degeneration. Along this particular line of observation the main conclusion to be drawn is that some toxin affects both the blood and the central nervous system, simultaneously in some; the blood first and the cord later in others; the reverse in others, and in still others only one of these systems seems to be affected. That this toxin is of intestinal origin seems probable from the constancy of gastrointestinal disturbance as one of the earliest symptoms regardless of which system may show the first or the greatest amount of degeneration. Billings gives, in the "Practical Medicine Series" for October, 1903, an excellent review not only of his own Shattuck lecture, referred to above, but also of the work of Warthin,[2] Hunter,[3] Merrit,[4] Strauss,[5] Hösslin,[6] and of LeClerc and Cade.[7] The most important of these, excepting the Shattuck lecture, is that of Warthin, who holds that the principal lesion in the disease is in the lymph glands. All, however, are worthy of careful reading, although at the end of the reading one finds himself standing upon wholly theoretical ground and forced to agree with Körmöczi,[8] "that the blood formula of pernicious anemia may not, in certain cases, be differentiated from the formula of secondary anemia," or with Grawitz,[9] who believes that pernicious anemia has no one individual cause. Grawitz says further that he does not believe that the diagnosis of pernicious anemia can be made at any single sitting of the patient, that a most painstaking, searching inquiry must be made into the previous history, the work, the care, the anxiety, the grief, the joy, the excitement, the previous or simultaneous illness or injury, the climatic, financial, social or domestic relations of the patient, anything which could possibly be a strain or vital influence upon the life, health, or comfort of the individual must be taken into consideration, and considered in its relation to all of the other physical or mental conditions of the patient, that no microscopic examination of the blood, howsoever characteristic of pernicious anemia, can be found which cannot be duplicated by cases of secondary anemia due to well recognized causes either curable or incurable.

By eliminating from our consideration for this evening, all cases which are not pernicious anemia, we may state that the patient will probably have these symptoms:

Gastric or intestinal indigestion, attacks of diarrhea more than ordinarily depressing in their character, accompanying or alternating fermentative generation of gastric or intestinal gases, and frequent feeling of physical and mental prostration, a gradual diminution of the number of red blood corpuscles, no increase of leucocytosis, a very marked poikilocytosis, numerous nucleated red corpuscles, normoblasts in great numbers, megaloblasts in nearly every mount, and a loss of hemoglobin indicated by Fleischl's test as at, or below fifty per cent of normal. In this disease there is frequently an appearance of the skin which can hardly be distinguished from the characteristic bronzing of Addison's disease of the suprarenal capsule.

In the only case of pernicious anemia which has come under my observation since I was able to distinguish the physical qualities of the corpuscles microscopically, the patient was so bronzed in appearance, with no discoloration of the sclerotics, that I was of the opinion that it was an unmistakable case of Addison's disease many months before I was called to the case professionally. On being called to the case, with no thought in my mind of finding anything other than Addison's disease, I made the diagnosis of gastric carcinoma in spite of the fact that the patient was very thin, had always been thin (in fact emaciation is not a characteristic of pernicious anemia), and I could find no tumor in the gastric or abdominal region, nor was there any history of gastric hemorrhage! The use of the stomach tube revealed a large amount of thick, ropey, exceedingly viscid, and glary mucous. Vomiting was a very prominent symptom. A test breakfast showed a total lack of hydrochloric acid either free or in combination. Lactic acid in abundance, yeast cells, and sarcinæ, fatty stools, and frequent and severe prostrating pain about the umbilicus.

In spite of the absence of tumors, I could not resist the diagnosis of carcinoma probably involving the pancreas, if not a portion of the stomach. The microscopic examination of the blood showed every characteristic of pernicious anemia. The autopsy showed the stomach and pancreas to be normal and, beyond a commencing degeneration of the suprarenal capsule, there was no abnormality found.

One other case which was under my care at the time this paper was commenced had five years previously a depressing gastrointestinal catarrh with marked lowering of the vital energies, two or three attacks of profound syncope, and frequent attacks which can be described as faintness with a feeling of impending syncope. At that time there was no examination of the blood and the cure was obtained by absolute suspension of all business cares, a change of climate and surroundings, and the administration of strychnia and arsenic. This case was spoken of as cured because at that time the patient was apparently free of all symptoms, although his blood, which had been reduced to considerably below 3,000,000, was again above 4,000,000, poikilocytosis entirely overcome, and the patient himself doing a very large and important work as superintendent of motive power in the Calumet and Hecla mine, yet shortly after, this patient, considering himself cured, returned to his work, was again attacked suddently with violent gastrointestinal symptoms of catarrh, distention, and upon that account a rapid loss of blood, and he was obliged to discontinue all efforts of physical or mental exertion. For the purpose of rest and recreation, I advised him to take an ocean voyage. He did so. On reaching London he found himself worse and consulted Sir William Broadbent. Sir William made a very searching investigation of his case, and while he told him that his case was obscure, probably due to nervous exhaustion from constant and difficult work, and having many of the symptoms of pernicious anemia, yet he had not pernicious anemia. Sir William advised my patient to go to Ventnor, in the Isle of Man. Professor Williamson, the distinguished English diagnostician, was at that time stopping in the same hotel with my patient in Ventnor, and Sir William Broadbent had given the patient a letter of introduction to him. Professor Williamson also, after very thoroughly investigating the case, pronounced it obscure, but yet, positively, not pernicious anemia. Both he and Sir William Broadbent advised the patient to abstain from work for at least a year, and with this aim in view the patient returned to America and to a pleasant resort in the central part of Pennsylvania. He had hardly become settled in this last place when a recurrent profuse diarrhea terminated the case fatally. An autopsy was not obtained, and the diagnosis has never been very distinct. My impression is that it was a case of pernicious anemia. In fact.I do not know of a single lacking symptom for the diagnosis of pernicious anemia in the case, except that throughout the entire illness, in perhaps one hundred microscopic examinations of the blood, made by myself and others (at different times in the course of his illness this patient was examined by several of the best diagnosticians of this country and of Europe), there was never found a megaloblast, but all the other physical qualities of the blood pertaining to pernicious anemia were present, although the anemia never reached the extreme grade which it frequently does in the secondary anemia of chlorosis. Probably it was never so low as two million red cells, but all the other qualities, with the single exception I have noted, were present—the violent attacks of gastrointestinal distress, physical and mental depression, et cetera.

The treatment of pernicious anemia can probably never be satisfactorily outlined so long as we are compelled to depend upon the present definition of the disease. By this I mean a progressive anemia without discoverable cause, a discoverable cause being the important factor in determining the successful treatment of most diseases. Probably, however, any case of pernicious anemia first coming to the notice of the physician, the case not having previously been subjected to treatment, will receive immediate benefit to the point of the very highest encouragement regarding a permanent cure, by physical and mental rest, with arsenic and iron as the chief medication, and a careful, systematic, and intelligent dietary. This improvement, however, will not be permanent, howevermuch encouragement we receive at first. If the case be pernicious anemia the improvement will inevitably give way to recurring attacks of gastrointestinal distress, with resulting depletion of the blood, and ultimately collapse.

The aim in every case should be diligently to search every possible depleting and depressing influence. The stools should be searched thoroughly for the presence of blood, either fresh or digested, for the eggs of anchylostomum, or other intestinal parasite, hemorrhoids, epistaxis, uterovaginal discharges of all kinds, particularly hemorrhagic, in fact every possible cause for the depleted condition of the blood, before the hopeless verdict be given of chronic, progressive pernicious anemia.

It should be borne in mind that a wonderful amount of research work is now being done upon the physiology and pathology of the blood, and we have reason to hope that soon more light will be given upon the at present obscure features of the wonderful changes taking place in this vital fluid. Until, however, something of a satisfactory character is learned I see no hope for these patients except the hope to be obtained in an intelligent prophylaxis and the possible comfort of prolongation of life to be obtained by intelligent, although strictly symptomatic, therapeusis. The day of the antitoxic serum for this disease has not yet come, nor is organotherapy as yet available, except that in many cases the preparations of bone marrow are the best means at our command in increasing the number of red cells and the amount of hemoglobin in the blood.

SUMMARY.

Briefly, pernicious anemia is at present defined as a progressive anemia without any discoverable cause. It is frequently associated with degenerative diseases of the spinal cord. It is almost invariably characterized by gastrointestinal disturbance especially depressing physically and mentally. It is probably caused by some specific toxin as yet unproved. The microscopic examination of the blood gives a characteristic picture and yet never one but that can be duplicated by some of the secondary anemias. Pernicious anemia is a very rare disease, and yet one which should be recognized by the general practitioner, and he will some day escape chagrin if he will habitually investigate every anemia which seems to be associated with unusually depressing attacks of diarrhea, or with symptoms indicating degenerative changes in the spinal cord.

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GOODLYE DOCTRINE AND INSTRUCTION.

By JOHN HALLE, 1564.

When thou arte callde at anye time,
A patient to see;
And doste perceave the cure to grate,
And ponderous for thee:

See that thou laye disdeyne aside,
And pride of thyne owne skyll:
And thinke no shame counsell to take,
But rather wyth good wyll

Gette one or two of experte men,
To helpe thee in that nede;
And make them partakers wyth thee,
In that worke to procede.

For in so doinge, thine honestye
Thou shalte well kepe and save;
Also thy patiente thereby
Right greate comforte shall have.

By thys meanes thou mayste haplye learne,
Ryghte seldome sene before;
Of thee, or hym, whych fyrste thee taughte,
Though thou have cunnynge store.

And also if oughte goe a wrye,
Or hinder in thy cure,
The one maye mende the others faulte,
While friendship dothe endure.

The wounded or sore man also,
Shall have no cause to grudge
In you suche uniformitye,
Whyle he maye see and judge.

and carried out by trained observers would confer upon the community blessings not to be calculated.

Again, in connection with the acute exanthemas—measles, scarlet fever, and diphtheria—the general practitioner has need of a working knowledge of otology. He is well acquainted with the fact that during an epidemic of one of these diseases the children of one family are always affected, while those of another always escape; that one child of a family always, as they say, takes everything, as it makes its rounds, while its brother or sister never does; and again, that with each attack one child will have a running ear while the other never will. The reason for this is not far to seek and lies in the fact that it is the child with the nasopharngeal hypertrophy who generally contracts the disease, and it is always the one to get the running ear whose adenoid is the most diseased or lies in the neighborhood of the Eustachian tube.

During the attack of one of these acute diseases it becomes a most urgent duty daily and carefully to examine the ears for the first sign of their implication. In these cases, while the ear generally remains unsuspected, it is an organ very generally seriously affected. The practitioner should then be able to recognize the earliest signs of infection and to take steps to prevent its spread, for to allow an ear to fill with pus and to rupture is the grossest negligence. The infection is often so virulent that not only may the tympanic structures be destroyed but the labyrinth also invaded before the tympanic membrane ruptures. Here eternal vigilance is the watchword of success.

How exceedingly important it is for the physician to ascertain early in his examination the exact condition of the ear, not only in the acute exanthemas but also in all the diseases of childhood, is shown by the fact that not only are ear complications exceedingly common but that the ear condition may be the sole cause of a very alarming train of symptoms. The young child with a temperature of 106°, delirium, convulsions, and even coma, whose condition is cause for gravest alarm, may be suffering from a meningitis or he may have simply an acute ear inflammation. The life of the patient and the reputation of his physician may rest upon the latter's ability to make this differential diagnosis. Ear diseases of childhood are important not only in themselves but because they cause other serious diseases in parts of the body quite remote from the seat of the original disease. For instance, it cannot be denied that not all the diarrheas of childhood are due to pathological conditions of the intestinal canal, for some of them are due solely to serous or suppurative diseases of the ear, and in such cases the most careful attention to diet, hygiene, et cetera, avails nothing until the ear condition is improved. The importance of this fact has been pointed out by internist and general practitioner as well as by the otologist, for Pomeroy and Dock have had referred to them children who had been ailing for months apparently from nothing more than intestinal disease whose condition arose from disease of the ear, which instances are sufficient evidence for the general practitioner that apparently slight unimportant acute ear conditions which have never caused symptoms referable to the ear may be enough to occasion disease quite out of proportion to the original cause.

It is not only to the diseases of childhood that diseases of the ear bear an intimate relation, for there are many diseases of adult life with which they are in an interdependance to a degree not sufficiently recognized. In this connection, one may mention tuberculosis as a disease in the course of which the ear may become seriously involved, and one in which the general practitioner is particularly interested, as the ear may be practically destroyed before the appearance of symptoms referable to it, or even of serious impairment of hearing. If the ear is to be saved, it must be due generally to his early examination and diagnosis. Again, during the course of specific disease, the ear may be most insidiously affected, for which, during the course of his treatment of the general disease, the practitioner should be constantly on the watch. Indeed, the constitutional diseases with which he is continually brought in contact are ones having aural complications, for the early observance of which he is chiefly responsible.

The significance of simple gathering in the ear, which, as one frequently hears, has run its course, is almost healed but still discharges somewhat, must be understood by the physician who knows that from such an apparently healing process a fatal general infection may follow.

While it is important for the physician to recognize that disease may attack the ear and to diagnose it when it appears, it is but slightly less important for him to be able to ascertain definitely by inspection that an ear disease has existed, has subsided, and has been forgotten, for one has but to remember the anatomical relationship of the ear and brain, separated as they are by a layer of bone, oftentimes no thicker than a sheet of paper, frequently perforated, to believe that a large per cent of purulent diseases of the brain substance may arise from a simple gathering in the ear, and that possibly far in the past. Inasmuch as in the absence of a probable etiological factor the majority of such cerebral diseases cannot be diagnosed, the necessity of accurate knowledge upon such a point, especially to the general practitioner, who is usually the first to see the case, is vital.

The practitioner should, then, appreciate the necessity of prophylaxis in its broadest sense against aural disease, the frequency and danger of ear complications, should be able to recognize, and what is equally important, remember to search for ear diseases. He should in addition be able to institute proper treatment for certain conditions. He should know the indication for timely incision of the tympanic membrane and be able to make it. He should remember, however, that the function of the ear is to hear and that the preservation and restoration of that function belongs, by reason of his education and training, to the otologist. To furnish himself with a Politzer air bag and an ear syringe and therewith to treat ear cases which he has neither time nor opportunity properly to investigate is to retain the case until hope for improvement is past. For him to undertake aural surgery is to expose himself and his patient to unnecessary risk, for, under ordinary circumstances, it is not his duty to operate upon that organ which Doctor Oliver Wendell Holmes has described as bounded upon one side by life and upon three sides by death.

Scientific medicine and surgery in all its branches is making such tremendous advance, the sum total of medical knowledge is increasing with such rapidity that it is quite impossible for any man no matter what his ability or his diligence to inform himself accurately in all lines. Specialization has long been a necessity and only by specialization can medical advance continue. The practitioner of general medicine himself has become a specialist, practicing in the broadest of all fields, which comes into most intimate relationship with all other fields. He is the most valuable man in the profession, but like other specialists, he must limit his practice. He can no longer treat every case that comes to him, but must in the best interests of his patient and himself refer those cases outside his specialty to physicians who by reason of their training have in certain lines acquired a skill which he does not possess.

TECHNIQUE OF OPERATION FOR APPENDICITIS.*

By HAL C. WYMAN, M. S., M. D., DETROIT, MICHIGAN.
PROFESSOR OF SURGERY IN THE MICHIGAN COLLEGE OF MEDICINE AND SURGERY.

THE first step in technique is the preparation of the patient. If the bowels have been freely moved further movement is not necessary. If they are obstructed attempts at movement will be futile until after operation for relief of the obstruction. The field of the disease must be carefully surveyed by palpation, and the point of fluctuation, if it exists, determined. Then the skin of the abdomen over the field of operation must be shaved and cleaned with bichloride solution one to one thousand. Incision must be made longe enough to give easy access to the diseased structure which the surgeon feels through the abdominal wall. Skin and fascia may be divided by one sweep with knife or stroke with scissors. Then the muscles may be cut through or they may be separated through their fibers until the peritoneum is reached. This can be cut with scissors, but often the inflamed appendix or its abscess will be adherent to it and it will be opened with handle of scalpel, point of scissors, or exploring finger of the surgeon. Pus or other fluid will now be evacuated. A finger should be inserted to make gentle search for the appendix in case that organ does not protrude through wound.

The ambition of the surgeon should be to remove the appendix by instrumentation and to keep the finger out of the peritoneum lest that organ become unavoidably infected. It is surprising what tactile sense, through instruments—forceps, can be disclosed and how little danger

*Read at the Detroit meeting of the FIRST COUNCILOR DISTRICT MEDICAL SOCIETY.

there is of tearing tissues already fragile by disease. And, when the appendix does not readily yield itself to forceps or finger and pus or other fluid has come away, leave the appendix to its own devices. The case should not be jeopardized by hazard thrusts and pulls to find a *corpus delichtu* which has done its worst. The wound, if drained, will take care of a rotten, reluctant appendix. Concretions must be removed, if found in the appendix or abscess. Now, separate the appendix and its mesoappendix from the cecum. A needle should be armed with double ligature of silk, linen, or catgut and thrust around the mesoappendix close to the cecum. Then free the needle and tie first the ligature which encircles the appendix. The bother to make a cuff or cut a groove or otherwise trifle with a tight, firm tie-off of appendix from the cecum is not necessary. Then cut appendix through close to knot and with other ligature tie the mesoappendix snug and strong to make sure against slip or hemorrhage from the meso through separating the morbid appendix from the patient. If there is pus insert a short drainage tube one and one-half inches long, which will do better than a longer one. It should just reach through the abdominal wall and is a menace if used too long. Let me assure you, members of this First Councilor District Medical Society, that I am speaking of my own methods without desire to foist them on you. This is no place for pedantry.

I close the abdominal wound with big free stitches, each of which embraces the whole abdominal wall from skin to peritoneum, and I tie each stitch so that there is no tissue necrosis to make easy the path of hernia. With the seriatim layer-after-layer method of suturing I have no sympathy, deeming it needless, and therefore meddlesome.

The odious postoperation hernias are due to two things—too tight and too much suturing and the abdominal bandage. In my clinic at the Emergency Hospital we have abandoned the abdominal binder in securing wounds in the abdomen, either for appendicitis or any other purpose, and in its place have substituted short adhesive straps which hold the surface dressings and do not interfere with the autonomy of the abdominal muscles.

The place to operate on a case of appendicitis is where you find it. The hospital fetish is largely to blame for the mortality of the disease. A ride in an ambulance and on a train; carriage on stretcher through halls and wards and up and down elevators to the ghastly, glaring, white walls of the operating room has no encouraging moral effect on a patient, who must undergo a serious surgical procedure for the cure of dangerous disease. There has been enough tribute to the tyrant sepsis, and other factors entering the treatment of appendicitis must have consideration. A reasonable, fair-minded master of surgical art will take the diseased appendix from the patient and restore him to health and usefulness just as quickly in the home as in the hospital, and with much less fuss and feathers.

PERNICIOUS ANEMIA.*

By EMMET H. POMEROY, M. D., HIGHLAND PARK, ILLINOIS.

ON attempting the expression of a few thoughts on the subject of pernicious anemia, I cannot offer anything new, and nothing original. In searching the literature of this subject, there appears wonderful change in opinions regarding the etiology of the disease with but very little change in prognosis, and practically no advancement in treatment since Addison published his famous monograph on the subject about half a century ago. Now, as then, pernicious anemia can be tersely described as a progressive anemia without any discoverable cause. The term etiology seems a misplaced expression in writing of a disease without a discoverable cause, and yet probably more has been written on the etiology of pernicious anemia than about any other feature of the disease.

The advancement in the scientific view of the etiology since the time of Addison, has been more in the elimination of cases from the category of pernicious anemia, that is to say, a disease which had no discoverable cause at that time does not remain so now, and is no longer classed as pernicious anemia.

An anemia caused by the depressing influence of anchylostomum was formerly called pernicious anemia, but when it was discovered that the disease was curable by the removal of the anchylostomum, then it was no longer called pernicious anemia. The same process of elimination was followed regarding the minute but chronic oozing of blood from the breaking down of gastric or enteric ulcer, there being a discoverable cause for the progressive anemia. Regarding the recognition of the disease, it can be truthfully said that the diagnosis is beset with more and more difficulties. A very few years ago, we were told by some of the more advanced students, that this form of anemia could be readily diagnosed by the microscope; that the microscopic examination showing a marked diminution of the number of blood corpuscles would show anemia; that the staining of films showing the nucleated red blood corpuscles would limit the disease, either to pernicious anemia or leukemia; and that the staining of the leucocytes by the Ehrlich-Biondi triple stain would readily show the characteristic features of leukemia if such would be present. This simplicity in diagnosis has been entirely shattered by the published observation of scores of hemologists and can be almost daily belied in our own practice.

Sex seems to play an unimportant part as an influence, some authors stating that the female largely predominates, while others state that if those cases be eliminated which seem to have their exciting cause or beginning as a result of pregnancy, the males would largely predominate.

It is believed that many cases of chlorosis (and what is by some termed fecal anemia) so closely resemble pernicious anemia in the physical qualities of the blood as to have led many of these cases to be incorrectly named pernicious anemia. Many cases are ascribed to overwork and underfeeding, but the disease is by no means confined to the very poor, and, on the contrary, is probably met with more frequently among the more prosperous class of people. Probably the one sympton which is the most constant in the early stages of pernicious anemia is gastro-intestinal disturbance. By some observers it has been stated that pernicious anemia never exists without atrophy of the gastric glands, and atrophy of the glands is ascribed as the invariable cause of pernicious anemia. This is met by the argument that atrophy of the gastric glands exists in eighty per cent of all cases of cancer of the breast and in all cases of cancer of the stomach, while progressive pernicious anemia is rarely if ever found associated with cancer of the breast and seldom with cancer of the stomach.

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*Read at a meeting of the LAKE COUNTY (Chicago) MEDICAL SOCIETY held at Waukegan, Illinois, February 7, 1905.

Howsoever much a disease of the gravity of pernicious anemia may seem to be without a discoverable cause, we yet have ground for the hope that some of the excellent work being done by hematologists of our day may disperse the cloud so long concealing the etiology of this disease. Already there are theories based not only upon good reasoning but also upon the results of much excellent work and careful observation.

A recent Shattuck lecture in the Harvard Medical School, delivered by Billings,[1] of Chicago, is one of the most valuable of recent contributions. In this lecture Billings discusses the changes in the spinal cord in pernicious anemia, and incidently refers to the work of other observers of the relationship of blood and nerve degeneration. Along this particular line of observation the main conclusion to be drawn is that some toxin affects both the blood and the central nervous system, simultaneously in some; the blood first and the cord later in others; the reverse in others, and in still others only one of these systems seems to be affected. That this toxin is of intestinal origin seems probable from the constancy of gastrointestinal disturbance as one of the earliest symptoms regardless of which system may show the first or the greatest amount of degeneration. Billings gives, in the "Practical Medicine Series" for October, 1903, an excellent review not only of his own Shattuck lecture, referred to above, but also of the work of Warthin,[2] Hunter,[3] Merrit,[4] Strauss,[5] Hösslin,[6] and of LeClerc and Cade.[7] The most important of these, excepting the Shattuck lecture, is that of Warthin, who holds that the principal lesion in the disease is in the lymph glands. All, however, are worthy of careful reading, although at the end of the reading one finds himself standing upon wholly theoretical ground and forced to agree with Körmöczi,[8] "that the blood formula of pernicious anemia may not, in certain cases, be differentiated from the formula of secondary anemia," or with Grawitz,[9] who believes that pernicious anemia has no one individual cause. Grawitz says further that he does not believe that the diagnosis of pernicious anemia can be made at any single sitting of the patient, that a most painstaking, searching inquiry must be made into the previous history, the work, the care, the anxiety, the grief, the joy, the excitement, the previous or simultaneous illness or injury, the climatic, financial, social or domestic relations of the patient, anything which could possibly be a strain or vital influence upon the life, health, or comfort of the individual must be taken into consideration, and considered in its relation to all of the other physical or mental conditions of the patient, that no microscopic examination of the blood, howsoever characteristic of pernicious anemia, can be found which cannot be duplicated by cases of secondary anemia due to well recognized causes either curable or incurable.

By eliminating from our consideration for this evening, all cases which are not pernicious anemia, we may state that the patient will probably have these symptoms:

Gastric or intestinal indigestion, attacks of diarrhea more than ordinarily depressing in their character, accompanying or alternating fermentative generation of gastric or intestinal gases, and frequent feeling of physical and mental prostration, a gradual diminution of the number of red blood corpuscles, no increase of leucocytosis, a very marked poikilocytosis, numerous nucleated red corpuscles, normoblasts in great numbers, megaloblasts in nearly every mount, and a loss of hemoglobin indicated by Fleischl's test as at, or below fifty per cent of normal. In this disease there is frequently an appearance of the skin which can hardly be distinguished from the characteristic bronzing of Addison's disease of the suprarenal capsule.

In the only case of pernicious anemia which has come under my observation since I was able to distinguish the physical qualities of the corpuscles microscopically, the patient was so bronzed in appearance, with no discoloration of the sclerotics, that I was of the opinion that it was an unmistakable case of Addison's disease many months before I was called to the case professionally. On being called to the case, with no thought in my mind of finding anything other than Addison's disease, I made the diagnosis of gastric carcinoma in spite of the fact that the patient was very thin, had always been thin (in fact emaciation is not a characteristic of pernicious anemia), and I could find no tumor in the gastric or abdominal region, nor was there any history of gastric hemorrhage! The use of the stomach tube revealed a large amount of thick, ropey, exceedingly viscid, and glary mucous. Vomiting was a very prominent symptom. A test breakfast showed a total lack of hydrochloric acid either free or in combination. Lactic acid in abundance, yeast cells, and sarcinæ, fatty stools, and frequent and severe prostrating pain about the umbilicus.

In spite of the absence of tumors, I could not resist the diagnosis of carcinoma probably involving the pancreas, if not a portion of the stomach. The microscopic examination of the blood showed every characteristic of pernicious anemia. The autopsy showed the stomach and pancreas to be normal and, beyond a commencing degeneration of the suprarenal capsule, there was no abnormality found.

One other case which was under my care at the time this paper was commenced had five years previously a depressing gastrointestinal catarrh with marked lowering of the vital energies, two or three attacks of profound syncope, and frequent attacks which can be described as faintness with a feeling of impending syncope. At that time there was no examination of the blood and the cure was obtained by absolute suspension of all business cares, a change of climate and surroundings, and the administration of strychnia and arsenic. This case was spoken of as cured because at that time the patient was apparently free of all symptoms, although his blood, which had been reduced to considerably below 3,000,000, was again above 4,000,000, poikilocytosis entirely overcome, and the patient himself doing a very large and important work as superintendent of motive power in the Calumet and Hecla mine, yet shortly after, this patient, considering himself cured, returned to his work, was again attacked suddenly with violent gastrointestinal symptoms of catarrh, distention, and upon that account a rapid loss of blood, and he was obliged to discontinue all efforts of physical or mental exertion. For the purpose of rest and recreation, I advised him to take an ocean voyage. He did so. On reaching London he found himself worse and consulted Sir William Broadbent. Sir William made a very searching investigation of his case, and while he told him that his case was obscure, probably due to nervous exhaustion from constant and difficult work, and having many of the symptoms of pernicious anemia, yet he had not pernicious anemia. Sir William advised my patient to go to Ventnor, in the Isle of Man. Professor Williamson, the distinguished English diagnostician, was at that time stopping in the same hotel with my patient in Ventnor, and Sir William Broadbent had given the patient a letter of introduction to him. Professor Williamson also, after very thoroughly investigating the case, pronounced it obscure, but yet, positively, not pernicious anemia. Both he and Sir William Broadbent advised the patient to abstain from work for at least a year, and with this aim in view the patient returned to America and to a pleasant resort in the central part of Pennsylvania. He had hardly become settled in this last place when a recurrent profuse diarrhea terminated the case fatally. An autopsy was not obtained, and the diagnosis has never been very distinct. My impression is that it was a case of pernicious anemia. In fact I do not know of a single lacking symptom for the diagnosis of pernicious anemia in the case, except that throughout the entire illness, in perhaps one hundred microscopic examinations of the blood, made by myself and others (at different times in the course of his illness this patient was examined by several of the best diagnosticians of this country and of Europe), there was never found a megaloblast, but all the other physical qualities of the blood pertaining to pernicious anemia were present, although the anemia never reached the extreme grade which it frequently does in the secondary anemia of chlorosis. Probably it was never so low as two million red cells, but all the other qualities, with the single exception I have noted, were present—the violent attacks of gastrointestinal distress, physical and mental depression, et cetera.

The treatment of pernicious anemia can probably never be satisfactorily outlined so long as we are compelled to depend upon the present definition of the disease. By this I mean a progressive anemia without discoverable cause, a discoverable cause being the important factor in determining the successful treatment of most diseases. Probably, however, any case of pernicious anemia first coming to the notice of the physician, the case not having previously been subjected to treatment, will receive immediate benefit to the point of the very highest encouragement regarding a permanent cure, by physical and mental rest, with arsenic and iron as the chief medication, and a careful, systematic, and intelligent dietary. This improvement, however, will not be permanent, howevermuch encouragement we receive at first. If the case be pernicious anemia the improvement will inevitably give way to recurring attacks of gastrointestinal distress, with resulting depletion of the blood, and ultimately collapse.

The aim in every case should be diligently to search every possible depleting and depressing influence. The stools should be searched thoroughly for the presence of blood, either fresh or digested, for the eggs of anchylostomum, or other intestinal parasite, hemorrhoids, epistaxis, uterovaginal discharges of all kinds, particularly hemorrhagic, in fact every possible cause for the depleted condition of the blood, before the hopeless verdict be given of chronic, progressive pernicious anemia.

It should be borne in mind that a wonderful amount of research work is now being done upon the physiology and pathology of the blood, and we have reason to hope that soon more light will be given upon the at present obscure features of the wonderful changes taking place in this vital fluid. Until, however, something of a satisfactory character is learned I see no hope for these patients except the hope to be obtained in an intelligent prophylaxis and the possible comfort of prolongation of life to be obtained by intelligent, although strictly symptomatic, therapeusis. The day of the antitoxic serum for this disease has not yet come, nor is organotherapy as yet available, except that in many cases the preparations of bone marrow are the best means at our command in increasing the number of red cells and the amount of hemoglobin in the blood.

SUMMARY.

Briefly, pernicious anemia is at present defined as a progressive anemia without any discoverable cause. It is frequently associated with degenerative diseases of the spinal cord. It is almost invariably characterized by gastrointestinal disturbance especially depressing physically and mentally. It is probably caused by some specific toxin as yet unproved. The microscopic examination of the blood gives a characteristic picture and yet never one but that can be duplicated by some of the secondary anemias. Pernicious anemia is a very rare disease, and yet one which should be recognized by the general practitioner, and he will some day escape chagrin if he will habitually investigate every anemia which seems to be associated with unusually depressing attacks of diarrhea, or with symptoms indicating degenerative changes in the spinal cord.

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GOODLYE DOCTRINE AND INSTRUCTION.

BY JOHN HALLE, 1564.

When thou arte callde at anye time,
A patient to see;
And doste perceave the cure to grate,
And ponderous for thee:

See that thou laye disdeyne aside,
And pride of thyne owne skyll:
And thinke no shame counsell to take,
But rather wyth good wyll

Gette one or two of experte men,
To helpe thee in that nede;
And make them partakers wyth thee,
In that worke to procede.

For in so doinge, thine honestye
Thou shalte well kepe and save;
Also thy patiente thereby
Right greate comforte shall have.

By thys meanes thou mayste haplye learne,
Ryghte seldome sene before;
Of thee, or hym, whych fyrste thee taughte,
Though thou have cunnynge store.

And also if oughte goe a wrye,
Or hinder in thy cure,
The one maye mende the others faulte,
While friendship dothe endure.

The wounded or sore man also,
Shall have no cause to grudge
In you suche uniformitye,
Whyle he maye see and judge.

But one thinge note, when two or moe
Together joygned be;
Aboute the paynfull patient,
See that ye doe agree.

See that no discorde doe arise,
Nor be at no debate;
For that shall sore discomforte hym,
That is in sycke estate.

For noughte can more discomforte him,
That lies in griefe and peyne,
Then heare that one of you dothe beare,
To other suche disdeine.

Wherefore what so ye have to saye,
In thinges about your arte;
Let it be done among yourselves,
In secrete and a parte.

With one consent uniformlye
Comforte the wounded man;
But unto some good frende of hys
Express all that ye can.

See thou dispraise none other man,
His error though thou knowe;
For sure an other for thy plage,
Shall then like cutsye showe.

TRANSACTIONS.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

STATED MEETING, JANUARY, 9, 1905.

THE PRESIDENT, DANIEL S. DOUGHERTY, M. D., IN THE CHAIR.
REPORTED BY JOSEPH A. ROBERTSON, M. D., SECRETARY.

READING OF PAPERS.

"*THE ABDOMINAL VERSUS THE VAGINAL ROUTE IN GYNECOLOGICAL OPERATIONS.*"

DOCTOR JOSEPH Y. MANGUM contributed a paper bearing this title. He said, in part, that whether to approach a pelvic lesion by the abdominal or pelvic route was a question often difficult to answer. It can only be answered correctly after a careful examination of the history, and especially of the physical conditions, has given the surgeon a clear idea of the intrapelvic conditions and of what he must accomplish to secure the greatest possible permanent benefit.

The choice of a route is never difficult in cases of recent extensive bilateral pelvic suppuration, pelvic abscess, puerperal sepsis, or in any collection of pus, blood or other fluid low down in the posterior culdesac. Here the way through the vagina should usually be chosen, because by this route we can evacuate the septic material, drain and cure, with the least possible danger of infecting the general peritoneal cavity. One has by this route the advantages of a small wound, a small raw area to absorb the septic material, and a natural sewer to drain through, avoidance of exposure in handling the intestines, and consequently less immediate risk and shock.

The vaginal route is, for a large proportion of cases, impracticable, and especially for the man of limited experience. The long, narrow vagina, the small vagina, or small vagina from senile atrophy may render the field almost inaccessible. Enlarged uteri, with short, thick, broad ligaments and enlarged appendages, and with adhesions extending beyond the reach of the finger, may cause it to be impossible to complete the operation satisfactorily. Under these circumstances the abdominal route is much to be preferred and much safer.

The abdominal route is also preferable in abdominal cyst, cystic ovaries, fibroids, myoma, tubal pregnancies, general conservative work on the appendages, such as occluded tubes, adherent ovaries and tubes, hydrosalpinx, broad ligaments, cysts and displacements of the uterus. First, there is a larger field for operation, which is exposed, and the operator is not compelled to rely entirely upon the sense of touch. Diagnosis of unsuspected pelvic and abdominal lesions and complications is much easier, and pathological conditions are revealed that would pass entirely unnoticed if the operation had been performed by the vaginal route. The field of operation is much cleaner as the surgeon does not operate through one sewer of the body and between two other sewers, and one that it is impossible to sterilize. The chances of adhesions are great, especially when gauze packings or instruments are left in the vaginal incision. Also, there is no danger of secondary infection, as in the vaginal route, and if the uterus, bladder, or intestines are wounded, they can be repaired at once and satisfactorily. Also, the abdominal route presents more light for conservative work on the appendages, and there is almost always a sensitive scar after vaginal incision, and not after abdominal.

DISCUSSION.

DOCTOR CHARLES G. CHILD, JR.: In my opinion no route is advisable for all cases, but I think that the vaginal route should be used much oftener than it is by the average gynecologist, though not so often perhaps, as by the vaginal operator. It has a much greater field of usefulness than the writer of the paper allowed. The operator who drains a pus-pocket through the posterior vaginal fornix is only following the way pointed out by nature. It is a very simple procedure, but celiotomy through the anterior vaginal fornix discloses the whole pelvic field for treatment, and by this method of approach any abnormal pathological condition limited to the pelvis can be satisfactorily treated. As to the writer's statement that sensitive scars persisted after the vaginal incision more frequently than after the abdominal, it has been my experience that the opposite is the case, there being a far greater nerve distribution in the site of incision in the abdominal wall than in that of the vagina. A tense sensitive condition of the uterosacral ligaments frequently persists for some time after a posterior incision for pus drainage, and very probably this condition is what the writer considers sensitive scar.

Doctor James H. Burtenshaw: It is preposterous to lay down a hard and fast rule as to operations by the abdominal or vaginal route. To a certain extent each and every abnormal pelvic condition requiring surgical intervention is a case unto itself, and the character of the lesion and the depth of the pelvis, the size of the vagina, the skill of the individual operator are all factors which must be duly considered. I deprecate the teaching that one method of attack should be followed to the exclusion of the other. While it is well known that vaginal section is far less productive of shock, in the majority of instances, it by no means follows that it should be adopted in all cases.

Doctor Benjamin Torrens: The lesions best treated by the vaginal route are those which lie below the brim of the pelvis, and which are the product of infections which have found their entrance through the vagina. In this list should be included not only puerperal infections and free pus in the pelvis, but also pyosalpinx, occluded and adherent tubes, cysts of ovary and broad ligament, adherent and retroverted uteri, and also early ectopic gestations. The advantages of the vaginal route in the above classes of cases are that in entering the peritoneal cavity but two anatomical layers are cut, which reunite without suturing, the lesions lie between the opening and the intestines, which are less liable to injury and infection, also, absence of hemostasis and ligatures; perfect drainage; shorter operation; less profound and shorter narcosis; no subsequent hernias; lower mortality.

Doctor Brooks H. Wells: In many instances the choice of route is a matter of individual skill or preference. Personally, I find the abdominal incision, in operations for the relief of uterine displacement, conservative work on the uterus or appendages, extrauterine gestation, most cases wherein hysterectomy is required, and where long tumors have to be removed. When there is extensive or recent pelvic suppuration, the vaginal method is the best.

Doctor Joseph C. Taylor: Over fifty per cent of gynecological operations are performed for pus. Now, Doctor Mangum said that with free pus in the pelvis and free fluid in the pelvis, he advised the vaginal method; but that cases of fibroids, tubal pregnancies, pyosalpinx, ovarian cysts, et cetera, should be done through the abdomen. The hospital records of Saint Luke's, Women's, and Roosevelt Hospitals for the past five years show that the pus operations done through the abdomen register a fatalty of ten per cent. The operations done by the late Doctor Pryor and Doctor Cleveland, through the vagina, show a mortality of less than one per cent. If patients operated on through the abdomen do get well, there will be either adhesions of the omentum and intestines or the risk of hernia in many cases. If a tubal pregnancy, for instance, ruptures before the sixth week, it will be found in the pelvic cavity, and should be opened there.

Doctor J. Riddle Goffe: The field of the vaginal operator is being gradually extended. Doctor Noble, of Philadelphia, a few years ago, operated on all pus-tubes through the abdomen, with a mortality of about twenty per cent, and now attacks them through the vagina with a mortality of less than one per cent. Nothing was heard about sensitive vaginal scar until the opposition arose to the vaginal route for minor pelvic surgery. Hysterectomies have been done for years and no objection made to the operation on account of sensitive scar, and the scar from that operation is much more extensive than that arising from an anterior of posterior vaginal section for dealing with the appendages. As a matter of fact, I have never met with a sensitive scar in any of my cases after vaginal section, and have probably examined as many as anyone.

REPORTS OF CASES.

A PATIENT WITH TUBERCULOSIS OF WRIST.

Doctor Victor C. Pedersen: I wish to show this patient. Several years ago she went to one of the large hospitals of this city with a condition presenting the early stages of arthritis of the wrist. Expectant treatment was adopted, and was followed by swelling of both the hand and forearm. Notwithstanding the fact that the metacarpal phalangeal joints were ankylosed, no effort was then made to reduce the ankylosis by the hospital staff. The patient was then recommended to go to the central part of the state, where she improved in general health. There the supposed diagnosis of tuberculous synovitis of the extensor tendon was made and explored operatively. Six months later she came to me for treatment and I did a resection of the wrist. The trapesium and the synovial membrane between it and the thumb were in fairly healthy condition, and were not removed; likewise, the membrane between the radius and the ulna, and the pouches between the bases of the fourth inner metacarpal bones. About a year later pain and swelling began to appear on the outer side of the hand, and a secondary operation was performed, when it was found that the trapesium and the synovial membrane were tuberculous. These were removed. The wrist was opened a year after that, and extensive tuberculosis of the metacarpal surfaces of the ulna and radius, and likewise of the other bones, was found, and the third operation was almost as extensive as the original resection. The arm was elongated, allowing the cavity which was left to fill with blood-clot, which organized without suppuration. This was done at the suggestion of Doctor Dawbarn, who was called in as consultant, but personally I thought it much better to accept shortening, and approximate the bone of the metacarpus to the bones of the forearm. Cosmetically, the condition of the patient's wrist is very satisfactory, and it is hoped that all tuberculous foci have been removed, but it is only five weeks after the operation, and too soon to tell the final result.

DISCUSSION.

DOCTOR ALEXANDER LYLE: For some years it has been my custom to adopt the expectant treatment in cases of tuberculosis of the wrist, but today I am in favor of operating at once.

DOCTOR JOHN A. BODINE: In tuberculosis of the hip-joint, where it is possible to get more or less perfect rest, there are reasons for adopting the expectant method of treatment; but I think in the wrist, where the anatomical configurations of the joint are so complex, and where it is so impossible to get physiological rest, it is better to operate at once. I think the result in the case shown very satisfactory, but it is entirely too soon to judge of the outcome of the operation.

A PATIENT WITH ARTHRITIS OF KNEE, PROBABLY GONORRHEAL.

DOCTOR PEDERSEN: I also wish to present a patient, the victim of a druggist's error, who, realizing himself to be in the early stages of gonorrhea, entered a drug-store and asked for flexible medicated urethral bougies, stating to the druggist the purpose for which they were intended. Instead of bougies, the druggist dispensed pure silver nitrate caustic in sticks, which the patient, in ignorance, inserted with the following results: Excruciating pain and burning, after a few moments, followed by total absence of feeling. Later, tremendous swelling and inflammation of the part appeared; total inability to urinate supervened, so that the use of the catheter was absolutely necessary. The fifth day after the accident there were silver nitrate burns on both thighs, as far as the knees, two or three of them having penetrated almost or quite through the skin, as subsequent scarring proved. The entire skin sheathe of the penis was swollen to several times its normal thickness; the margin of the foreskin was burned raw almost completely around; the glans was violently inflamed, swollen and edematous. It was impossible to retract the foreskin even partially. The meatus was with difficulty brought into view, and was completely filled with the typical whitish slough of silver nitrate burn, which extended backward fully four inches, and gave the urethra the feeling of boggy, rotten rubber tubing. Behind the slough the urethra was distinctly tender. The prostate was not investigated. The urethra was cocainized, a soft lisle thread catheter was inserted into the bladder, and about fourteen ounces of clear urine were withdrawn. The patient was sent to the hospital, and lead and opium wash applied externally. The copious discharge was found to contain gonococci. The patient was catheterized once in twelve hours, in order to decrease the likelihood of infecting the bladder. Within twenty-four hours after admission, drainage was carried out through the perineum with the double purpose of stopping the catheterizing and of putting the urethra at rest. At the time of the operation the slough came away in mass, and the urethra and bladder were irritated thoroughly and copiously with very hot potassium permanganate solution, one to four thousand. Subsequent treatment was irrigation of the bladder with hot potassium permanganate solution and hot boric acid water two or three times a day. The same substances were also used on the urethra. At the time of operation a number thirty-two French sound was passed, without force, through the urethra. About six days later, twenty-five and twenty-seven French straight sounds were passed with some pain to the bulb of the urethra. Later, under gas anesthesia a thirty French straight sound was passed. All subsequent examinations of the discharge for gonococci have been negative, and at the present time the patient passes, with the aid of cocainization, a twenty-nine French sound quite easily. On the day following the original operation, the foreskin was slit dorsally from end to end, in order to be sure that there were no severe burns of the glans. Circumscision will be carried out upon the patient within a few weeks. Whether it will be necessary to do an internal urethrotomy through the scar of the deepest burn, in order to gain space, remains to be seen.

A HYSTERECTOMY SPECIMEN WITH HISTORY.

DOCTOR PEDERSEN: I also wish to present a specimen which has been removed from a patient on whom hysterectomy for extensive laceration has been performed. The patient's history, previous to marriage, was negative. Ten months after marriage she was delivered of a full-term dead child, with instruments. The puerperium lasted ten weeks, with severe symptoms. Two miscarriages, the following year, were followed by pregnancy some months later, with what was considered menstrual flow during the first six months. She was delivered of a full-term male child by the breach, with little trouble, the puerperium lasting ten days. This child is strong and healthy at the present time. Eighteen months later she was again pregnant, giving birth to a second male child. The mother nearly lost her life through hemorrhage. This boy is also living and in good health at the present time. Nursing was impossible through weakness of the mother. She was, however, able to nurse her first son for fifteen months. In the summer of the next year she was again pregnant, and during the winter nearly had a miscarriage. She gave birth, however, to a female child. This labor was nearly natural, and no physician was on hand at the time. The child is also living and in good health. A year later she was taken sick with apparently accidental hemorrhage during a pregnancy. Upon her physician's advice she went to a hospital in Connecticut, where a curetting was carried out, four days after which she had a miscarriage of apparently a six weeks' fetus.

Later in the same year she again went to the same institution, where she was treated for syphilis. Her doctor, doubting the diagnosis, sent her to a specialist in this city, who positively denied the existence of syphilis in the eruption. In December of the same year the patient had a miscarriage. In December, 1903, she was sent to a New York Hospital, for the repair of a very extensive laceration, extending almost to the left horn of the uterus. Suture of the tear was done, and secondary hemorrhage almost carried the patient off. After her recovery she was told to return in October for examination, when she was informed that hysterectomy was necessary, but her condition would hardly warrant the operation. I saw her late in October, in excellent general health and spirits, and showing a uterus normal in size, form and consistency, freely movable from the back, right side and front, but distinctly adherent on the left, where an extensive infiltration was present, associated with an extensive tear, the depth of which was not fully explored. Hysterectomy was advised and performed, November 17, 1903. The patient made an uneventful recovery, and was discharged December 15. The operation which proved somewhat difficult, was carried out through an abdominal incision.

When sent to New York, the patient had been suffering intolerably for two or three months at each menstruation, and had been scarcely free of pain at any time. Since the hysterectomy the doctors say she has been entirely free of pain, well and happy, recognizing each menstrual epoch, and has had a number of hemoptyses, which subsequently changed to epistaxis at the time considered by her to represent her monthly flow. A report from the doctors state that she has gained in weight, and her monthly flow is still recognizable, being accompanied by epistaxis, frequently, occasionally by hemoptysis, and once by hemorrhage from the bowels, and by the usual nervous disturbances.

DISCUSSION.

DOCTOR J. RIDDLE GOFFE: The history of the patient upon whom the hysterectomy has been performed, as well as the ultimate outcome, justified Doctor Pederson's procedure. I am surprised that the patient suffered with the symptoms of vicarious menstruation, and should have nose-bleed at the regular monthly recurrences. Examination has proved that the fallopian tubes play a very active part in the shedding of blood, and I have operated on two cases in which I had the opportunity of watching the dripping of blood from the uterine ends of the tubes into the vagina.

RESULTS OF TREATMENT OF ENDOCARDITIS IN CHILDREN.

DOCTOR LUCY JONES: I wish to show several children whom I have treated for endocarditis. The first patient, a boy about eight years, was first seen by me in July, 1902. His mother then said that he had for three days suffered from a fever for which she could not account. As is my custom, I stripped him and began examination from the head. His tonsils were swollen, lungs negative, heart presented a presystolic murmur at the apex, which accounted for his fever. He was put to bed, and absolute rest insisted on; salicylate of soda given, an ice-bag put over his heart, and a milk and cereal diet ordered. Temperature gradually dropped each day until normal at the end of a week, but the pulse continued high, so the ice-bag was kept on for three weeks. At the end of the fourth week he began to sit up a little each day. When he first sat up the murmur was very faint but after a few days appeared very markedly. At present he walks and plays without any inconvenience to himself, and no murmur is apparent until he walks rapidly up and down the room a few times, when it becomes very marked.

The second patient, a girl of about six years, came to the dispensary with a history of three previous attacks of rheumatism. At this time she had been sick for three days,. with pain and swelling in the ankles, and high fever, which would not yield to treatment. Examination of the heart revealed a systolic and presystolic murmur at the apex. She was also put to bed with an ice-bag over her heart, and one week later, had difficulty in breathing, was pale and anemic, and examination showed that the cardiac dullness extended from the articulation of the costal cartilage on the right side to one inch beyond the nipple on the left side. The heart sounds were distant and muffled. The diagnosis was pericarditis, with effusion. A fly-blister was put over the heart, and the effusion gradually disappeared, and the patient developed the friction rub of pericarditis, which also disappeared. At the end of a month the child was allowed to sit up. She runs and plays without difficulty, has not had an attack since, and is now perfectly well. No murmur is heard.

The next patient has been under treatment for three years. He gave no history of rheumatism. When first seen he looked shook all over, and could not control his muscles nor hold anything in his hand. There was an aortic systolic murmur with slight rise of temperature. He was put to bed, an ice-bag applied, and salicylate of soda administered, and within three days he had a presystolic murmur at the apex, as well as the aortic. In two weeks the chorea disappeared, but the heart was the same. At the end of one month he had an aortic, systolic, presystolic and systolic murmur at apex; at the end of three months, he had a systolic murmur at the apex. When he was allowed to get up, two months later, he had an attack of indigestion, and three days later the heart was attacked a second time, which lasted six weeks, when he was up again for two months, and then in bed again for five. He had hypertrophy of the left side of the heart, and acute dilatation of the right side, with attacks of angina. He exercises mildly, takes digitalis in small doses, which are increased when the heart does not do its work well, as the right-side dilatation is still present.

The fourth patient had an attack of rheumatism about a year ago, with endocarditis, which was entirely cured, but later had two slight attacks of rheumatism, for which her mother treated her at home. She was allowed to run around the house, and tonight she has a presystolic and a systolic heart murmur, the result of not having been treated during the last attack of rheumatism.

In my opinion, the rest was the most important part of the treatment, the ice-bag, salicylate of soda, et cetera, being but secondary considerations.

DISCUSSION.

Doctor F. Beal: I think the keynote of the whole treatment was in the one word, "rest."

Doctor Maurice Packard: Treatment of endocarditis in children is more promising than in adults, and if the disease is recognized early enough, even if ulcerous, there is hope of a cure. In the first case shown, I think that the heart was not compensated, because the murmur, although absent at other times, was brought out by exercise. Compensation in these cases can often be brought about by stimulation, and the best method is by judicious diet. I advise feeding the children six or eight times a day, and very little at each feeding, and not allowing them to drink much liquid at any one time, as rapid filling of the vessels of the heart would cause dilatation. I think that puberty often brings on compensation, as then the muscles both hypertrophy and dilate as well.

Doctor Jones: The boy is now on a diet, his exercises are watched, and at the first sign of fever his mother puts him to bed and keeps him there until entirely well.

SPECIMEN OF PRIMARY EPITHELIOMA OF TONSIL.

Doctor Joseph A. Robertson: I wish to present this specimen, which I removed from the patient a month ago. The history is that nine months ago a slight swelling appeared at the angle of the right side of the jaw, which gradually increased in size, but there was no sore throat. Examination revealed a much ulcerated tonsil. Epithelioma was suspected, and four days later I removed part of the tonsil and eight or ten glands, and had them examined, and the diagnosis of primary epithelioma of the tonsil was made. The enlargement of his throat at the present time has developed during the last four weeks. *X*-rays are being used, and boric acid and aristol are being blown in as a powder on the tonsil growth.

DISCUSSION.

Doctor John A. Bodine: In all cases of suspected malignancy of tonsil, physiological doses of iodide should be given, and the dose should be increased until one of two things happens: either the disappearance of the lesion or symptoms of constitutional iodism, and, in my own practice, I have administered as much as nine hundred grains of iodides in one day, with resulting disappearance of the lesion. As to the removal of a piece of the tonsil for microscopical examination, the wisdom of such procedure is open to question, unless the patient is fully prepared for immediate operation upon the report of malignancy. The clinical diagnosis of malignancy in the case shown is sufficient, without the microscope, and in the event of a different report by the pathologist, I would place his clinical diagnosis above that of the microscope, and operate anyhow.

Doctor Milton Franklin: The microscopical picture presented by this condition cannot always be accepted as final. I recall a patient who had received a physiological dose of iodide without effect, and examination of a section of the tonsil under the microscope presented all the structural characteristics of epithelioma; two weeks later a second section was removed, which showed no evidence of epitheliomatous infection; a third section, two weeks later, presented the typical picture of epithelioma, as did the clinical aspect of the case, which resembles multiple epithelioma of the side of the face, tonsil and lip. Potassium iodide was administered, and when the iodide was removed, the lesion disappeared entirely. *X*-ray treatment, I think, helps these cases more or less, as the lesions grow smaller, and even often disappear, but ultimately the condition again develops, and the outcome is rarely satisfactory.

Doctor Daniel S. Dougherty: I have seen two cases, both of whom were treated with iodides, and both of whom died before the physiological dose was reached. I tried to persuade both patients to submit to early radical operation, but without success. In one case the growth was very gradual for twelve or fourteen months, and then suddenly developed very rapidly.

Doctor Robert C. Myles: In my opinion the only hope for cure in these cases lay in early and radical operation. I have at the present time a patient suffering with epithelioma of the tonsil who absolutely refuses to be operated on, and who is being treated with the *x*-ray, but, although the mass is becoming smaller, I have no confidence in the ultimate result.

Doctor Robertson: My patient was given potassium iodide, five to ten grains, increased daily, in saturate solution. The advisability of a secondary operation was discussed, but was not deemed wise because of the almost certainty of recurrence in all of these cases.

ORIGINAL ABSTRACTS.

SURGERY.

By FRANK BANGHART WALKER, Ph. B., M. D., Detroit, Michigan.
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AND
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CONGENITAL DISLOCATION OF THE HIP.

Under this head Harry M. Sherman discusses (*Journal of the American Medical Association,* Volume XLIV, Number I) the bloodless method of reduction versus arthrotomy, and presents the results of a few cases from his own practice. After referring to a former report of thirteen manipulative reductions made at the New York State meeting of the American Orthopedic Association in 1899, he goes to the pith of the trouble, in his judgment, by repeating the statement of Lorenz that the obstacle to reduction was the narrowed part of the capsule just at the posterior and superior or superior part of the acetabular rim. He then makes the assertion that in but one of twenty-eight cases in which he had done arthrotomy and had explored the capsule and known its size, was it possible for the head to pass. The attempt to force the passage, he infers, has resulted in the various accidents chronicled, namely, fractures of the femur, pubis and ilium, paralysis, rupture of the capsule of the hip-joint distal to the constriction, thrusting of the femoral head out among the muscles of the thigh, lacerations of muscles, extravasations of blood, hematomas and the one case reported by Lorenz of gangrene of the whole lower extremity.

The percentage of successes has been variously estimated. The writer does not seem to believe that Lorenz got good anatomic results in about half of all his cases. He seems more inclined to regard ten per cent as the true result, and declares that this percentage is not enough to warrant the risk and not enough to justify the method apart from the risk. He maintains that arthrotomy answers to the very definite indication in these cases and that it can be done as safely as appendectomy without exposing the patient to the accidents attending manipulative reductions.

The author reports twenty-eight hips in twenty children reduced by arthrotomy. They ranged from ten months to eleven years of age. "In each instance," he says, "the femoral head has been put into the acetabulum, cartilage to cartilage." Seventeen hips are stated to be in stable position, with the head in the acetabulum. In those children under seven years of age there is, he writes, ample range of motion at the hip. In the older children there is a tendency to ankylosis, the permanent character of which will depend upon the activity of the child. In two cases he admits slight staphylococcus albus infection of the skin incision. No case, he asserts, had any infection of the deeper tissues.

Another point raised by the writer relates to the difficulty of performing arthrotomy after severe manipulative treatment. He contends that laceration of the capsule precludes successful arthrotomy, and holds that those rules should govern here which are analogous to those that govern taxis for a strangulated hernia.

In preparing the child for operation he first arranges a rolled sheet between the thighs and brings the ends of it up beyond the head for purposes of traction. Skeins of yarn are fastened by a clove hitch around the thigh above the knee and around the ankle, for countertraction. The incision advised by Lorenz is then made during traction, separating the muscular fibers and exposing the capsule. The capsule is cut in the same direction and the femoral head showed. Traction ceases, and with the finger in the wound as a guide the capsule is cut further, care being taken not to cut its anterior portion and the ilio-psoas tendon. Traction is again applied and reduction performed. The wound is closed with the exception of a cigarette drain, and both limbs and the pelvis put into a double plaster-of-Paris spica. The drains are removed after forty-eight hours if there be no sepsis, and the leg left undisturbed for three months. After this interval the double spica is exchanged for another encasing only the leg operated upon, the limb being in a more adducted position. After another month the foot may be freed and the child allowed to walk in the plaster. After six months the knee may be left free. The dressings may be discontinued after nine months. The long treatment prescribed has been found by the author to bring about the best results. If sepsis occurs the author favors reluxation to avoid an ankylosed hip. F. B. W.

GYNECOLOGY.

BY REUBEN PETERSON, A. B., M. D., ANN ARBOR, MICHIGAN.
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REMOVAL BY VAGINAL CYSTOTOMY OF SKELETON OF ECTOPIC FETUS ULCERATING INTO BLADDER.

WILLIAM D. HAGGARD, M. D., reports (*American Journal of Obstetrics,* November, 1904) the case of a woman, aged thirty-one, who presumed herself normally pregnant and expected to be confined August 30, 1900. There was a continuous flow from the uterus for the first three months, and she had pain in the bladder and straining on micturition from the beginning of conception. There was no history of rupture of an ectopic sac. She had felt fetal movement until six and one-half months. She had pain for a year and the enlargement of the abdomen gradually diminished. Pus appeared in the urine at the end of a year, and a fetal vertebra made its exit through the urethra. Bones were passed per urethra from time to time for two years. She passed all together eighty-five bones. Frequently the bone would cause a stoppage of urine.

The patient was operated upon October 31, 1902. Numerous bones were detected in the bladder. An opening into a lesser chamber and communicating with the bladder was found on the right upper surface. Fifty-two bones were removed through an incision in the vesicovaginal septum. The ectopic sac was removed with good result. C. L. P.

ECTROMELUS.

DOCTOR HENRY F. LEWIS reports a case of a boy eleven weeks old, healthy, well-nourished and perfectly developed, except for his extremities (*American Journal of Obstetrics,* December, 1904). The arms end at the elbows. The shoulder girdle and humeri seem to be intact. Each arm ends in a conical stump as if the lower segment of the limb had been artificially amputated. There seems to be no trace of lower limbs except the buttocks and very short fleshy stumps at the hips. The genitals are perfectly developed. The author classifies this condition as Hemimelus Thoracicus et Amelus Pelvicus. The article is accompanied by three illustrations. He discusses the different forms of ectromelus and gives an extensive bibliography. C. L. P.

OBSTETRICS.

BY WILLIAM HORACE MORLEY, PH. B., M. D., ANN ARBOR, MICHIGAN.
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PUERPERAL ECLAMPSIA.

MACNAB (*Journal of Obstetrics and Gynecology of the British Empire* for November, 1904) reports a "Case of Puerperal Eclampsia Treated by Thyroid Extract Dissolved in Saline and Given Subcutaneously." Fourteen hours after first seeing the patient, two pints of saline solution were prepared in which seventy-five grains of thyroid extract were dissolved. This solution was then injected below the breasts. Within an hour and a half there was a decided improvement, both in the severity and the frequency of the fits, and in another hour the bowels moved and labor began. Under chloroform the labor was terminated by the use of forceps, with as little delay as possible, and on the removal of the placenta bleeding was freely encouraged. The child was dead. So far as could be counted the patient had thirty-seven convulsions, none appearing after the child was born.

H. S. M'G.

PEDIATRICS.

BY ARTHUR DAVID HOLMES, M. D., C. M., DETROIT, MICHIGAN.

DIPHTHERIA.

DOCTOR F. W. BOGGESS discusses (*American Practitioner and News,* May, 1904) the differential diagnosis and the treatment of diphtheria. On the subject of treatment he says: "Today a physician who hesitates one moment to use antitoxin is guilty of malpractice and a physician who could, but would not use it in the beginning of a case, if the patient should die is almost a criminal." He supports his views by stating that there are "neither real nor alleged dangers from the injection of antitoxin," and recommends an initial dose of one to four thousand units of concentrated antitoxin for children under two years of age, and that it should be repeated every twelve to twenty-four hours if necessary. If given early and in these doses, intubation is almost never required. The signs of improvement are the fall of temperature within twenty-four hours, improvement in the pulse, the mind becomes clearer, the membrane does not spread, or it begins to exfoliate, and severe cases become mild. He recommends in addition complete rest, free supply of water, careful feeding, nasal and rectal in some instances, and stimulants. Local treatment should not be neglected unless force is necessary to carry it out. Patients should be kept in bed for some days after the throat symptoms have disappeared.

THE FEEDING OF CHILDREN DURING THE FIRST TWO YEARS OF LIFE.

Buden and Planchow strongly recommend (*Gazette des Hopitaux,* page 13, 1904) suckling whenever possible and only resort to mixed feeding when the maternal supply is insufficient. The authors do not discuss artificial feeding in the first months, but state they consider it difficult and dangerous. Great care should be taken to avoid overfeeding and they even prefer underfeeding for a time, even if the child does not grow or gain in weight, as it will at least leave no digestive troubles and will later, when more food is given, grow and gain rapidly.

For children weighing five or six kilos, the general rule is laid down that they should be given daily an amount of pure milk, equal to one-tenth of the body weight. During the second year the same proportionate quantity should be given with the addition of a little farinaceous food, but no other food is required. Meat soups and eggs should be avoided. Of seven hundred twelve children fed in this way during one year the mortality was seventy-six per one thousand and none of the deaths were due to infection of the alimentary canal. During the same year for the whole of Paris the mortality among children of the same age was one hundred seventy-eight per one thousand—a striking difference.

ORTHOPEDICS

By IRA DEAN LOREE, M. D., Ann Arbor, Michigan.
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EXPERIMENTS TO DETERMINE WHETHER PLASTER-OF-PARIS CONTRACTS OR EXPANDS IN SETTING.

J. Torrance Rugh, M. D., of Philadelphia (*American Journal of Orthopedic Surgery,* August, 1904), states that it is firmly believed, by many surgeons, that plaster-of-Paris contracts in setting and that this is the reason, often given, for the bad results following its use. The published reports of these cases have kept many from using this valuable agent. In his series of twenty-four experiments, he shows that plaster-of-Paris does not contract but expands in setting, and adds that the failures result from careless and ignorant methods of application. He speaks briefly of the medicolegal aspect of such cases where damages have been awarded from injuries from pressure by plaster splints. "Brains and common sense are two essentials in the successful use of plaster-of-Paris; and, if one has these, and will utilize them, the confidence engendered thereby will prevent misapplication."

OTOLOGY.

By R. BISHOP CANFIELD, A. B., M. D., Ann Arbor, Michigan.
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OTITIC PYEMIA.

Richard Freytag (*Zeitschrift fuer Chrenheilkunde,* Volume XLV) describes four cases of pyemia complicating purulent otitis media. He considers osteophlebitic pyemia possible without the formation of a purulent thrombus. Laying bare the sinus is not an altogether safe procedure. Pyemia may follow irritation of the sinus by the introduction of gauze between the bone and the sinus wall, so that a parietal thrombus is formed. Collection of pus after operation and during the after treatment may cause a perisinus abscess which leads to purulent thrombosis.

LARYNGOLOGY.

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ASSISTANT TO THE CHAIR OF LARYNGOLOGY IN THE DETROIT COLLEGE OF MEDICINE

CANCER OF THE LARYNX.

Sir Felix Semon (*Medical Record,* November 5, 1904) gives in this article his positive views on the subject. The author does not agree with Lennox Browne that benign laryngeal growths were especially liable to undergo malignant degeneration after intralaryngeal operation, nor does he agree with Bernhard Fraenkel in advising intralaryngeal operations for malignant growths. He criticises sharply the position taken by John Mackenzie, who advocates the naked-eye diagnosis of malignant disease of the larynx in its early stages to the complete exclusion of the intralaryngeal removal of a fragment for the purposes of microscopical examination. He also opposes the dictum of Mackenzie, who advises the early total extirpation of the entire organ with its tributary lymphatics and glands. These and other points he discusses in detail and summarizes his conclusions as follows:

(1) It is of the greatest importance that the diagnosis of laryngeal cancer be made at the earliest possible moment. For this purpose it is most essential that the still prevailing notion—namely, that malignant

disease of the larynx is from the first attended by all sorts of grave constitutional symptoms—be completely eradicated, and that the attention of the general practitioner should again and again be drawn to the fact that there are no more promising cases for radical operation than those in which the disease is at first manifested by nothing else than by obstinate hoarseness, occurring, without any apparent cause, in middle-aged and elderly persons.

(2) Clinical diagnosis arrived at from the history and subjective symptoms of the case, from laryngoscopic examination, from accessory circumstances of importance, such as the patient's age, et cetera, has reached a certain degree of perfection, and enables us in a good many cases to make a correct diagnosis at an early stage of the disease; it is, however, by no means absolutely perfect, and occasional mistakes occur even in the practice of those most experienced.

(3) In these circumstances clinical diagnosis ought, whenever possible, to be confirmed before radical operation of any kind is undertaken, by the intralaryngeal removal and microscopic examination of a fragment or fragments of the new growth. This, however, should only be done if the patient previously consents to immediate radical operation being undertaken in the event of the microscope confirming the clinical diagnosis. Should this be the case the practitioner's position will have been materially strengthened. The microscope, however, is by no means infallible in these cases. Should its evidence be negative or inconclusive, the intralaryngeal removal and microscopic examination of fragments should either be repeated, if necessary, several times, or, if the clinical symptoms do not warrant postponement, exploratory thyrotomy should be undertaken.

(4) The intralaryngeal method is from its very nature unsuitable for the radical removal of malignant new growths of the larynx.

(5) Subhyoid pharyngotomy, apart from being applicable in a very small number of cases only of malignant disease of the larynx, is still *sub judice* with regard to its advisability in such cases.

(6) Thyrotomy, if undertaken in suitable cases, and at a sufficiently early period, and if performed on the modern lines which experience has shown to be successful, is a perfectly ideal operation in intrinsic cancer of the larynx.

(7) Hemilaryngectomy comes into question only when it is found after opening the larynx that mere thyrotomy will not suffice. When performed it may be accompanied by removal of the tributary lymphatics, even if apparently not diseased.

(8) Total laryngectomy should be exclusively reserved for extrinsic, and for those cases of intrinsic, cancer, in which both sides of the organ are affected, and in which the disease has proceeded too far to be eradicated by milder measures. When performed it should be accompanied by the removal of the laryngeal lymphatics on both sides of the neck.

DERMATOLOGY.

By WILLIAM FLEMING BREAKEY, M. D., Ann Arbor, Michigan.
LECTURER ON DERMATOLOGY AND SYPHILOLOGY IN THE UNIVERSITY OF MICHIGAN.

NOTES ON LEPROSY.

Raymond (*Archiv. de Neurol.*, August, 1904) describes two cases of typical nerve-leprosy. He gives a differential diagnosis from syringomyelia, interstitial hypertrophic neuritis and muscular atrophy. As for Morvan's disease, the author holds that his two patients were suffering from complex symptoms of paresis analgesia and anesthesia, but that it is common to several conditions, including some forms of syringomyelia and some forms of leprosy.

The anatomical examination of a large number of cases of leprosy by Laehr and others seems to have definitely shown that the two diseases—syringomyelia and leprosy—are each associated with a distinctive morbid anatomy.

Gerber and Rudolph report a case, the only one on record, where the lesions of the two diseases were combined. This patient was a woman, aged eighty-seven, who presented the motor sensory and trophic changes characteristic of the type of Morvan. A peculiar deformity of the nose as well as striking changes of the skin suggest that the case might be one of those of leprosy not infrequently diagnosed as syringomyelia. The patient died three months after admission. The anatomical examination showed central gliosis extending its whole length with cavity of the cord from the level of the second cervical to the second dorsal segment. The bacillus of leprosy was found in the skin changes in considerable numbers. They regarded the occurrence of the two diseases in the same patient as accidental.

From the Louisiana Leper Home at Indian Camp, one patient, a boy of fourteen, has been discharged, free from evidences of the disease, for over a year.

From Guadelope, Doctor Noel (*Lepra,* Volume IV, fasc. 4, 1904) gives the history of leprosy in Gaudelope methods of isolation practiced—which is entirely voluntary. There is no belief in heredity but proof of contagiousness. Governmental provision has been made for nearly two hundred years. A marked amelioration in most cases has been observed from the use of chaulmugra oil and strychnia.

At last report available (for 1902) there were three thousand two hundred eighty-eight lepers recorded in the Philippines, and twenty-six cases in 1903 on the Island of Guam.

Rost (*Indiana Medical Gazette,* May, 1904, page 167, and June, page 203) claims that by using a special medium he has recently succeeded in cultivating the leprosy bacillus, and with the cultures has prepared an inoculating fluid for the treatment of the disease. For certain reasons, which he does not state, he has come to the conclusion that the leprosy bacillus is what he terms achloretic, that is, will not grow in the presence of the salts of chlorin. The special medium is prepared either by distilling beef extract and using the distillate or by dialyzing nutrient agar in hot distilled water or beef or fish broth, et cetera. Thirty-five cases of leprosy have been treated with the "leproin", as the inoculating fluid is called, one to four hypodermatic injections being given at intervals of a fortnight, ten cubic centimeters causing a violent reaction, the temperature going to 104° Fahrenheit and the patches becoming red, hot and swollen, in most cases being followed by marked improvement, the ulcers healing and sensation returning. It is too early, as *The Practitioner* says, yet to state the ultimate results of this mode of treatment but it seems promising.

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The report of Doctor Isadore Dyer to the Fifth International Dermatological Congress, Berlin, September, 1904, on "Leprosy in North America," deals chiefly with collective data of the prevalence of leprosy in regions, legislation for its restriction, and other pertinent facts, showing that it is so rare in most of the United States as to be almost unknown, that of the few states having such numbers as to require special legislation Louisiana, California, Florida and Minnesota may be mentioned, and in these it is declining. Many cases are doubtless overlooked from lack of care in diagnosis, and probably lepers may be found in nearly every state. With more communication with Hawaii, the Philippines, Cuba and Porto Rico, we are very likely to have imported cases of incipient leprosy, notwithstanding the vigilance of quarantine regulations.

It is a significant fact that in California and in some other states, and in several cities, the civil authorities gave no reply to inquiries, yet prominent competent physicians report numerous authenticated cases.

The most interesting and valuable facts shown are that the popular fear, both lay and medical, of leprosy, is needlessly exaggerated, and that while precautions should be taken to guard against immediate or mediate infection, yet cases of leprosy may be admitted to any hospital under proper restrictions, more safely than could many other forms of infectious disease now admitted. The lepra bacillus has recently been demonstrated in a resident of Michigan.

THERAPEUTICS.

BY DELOS LEONARD PARKER, PH. B., M. D., DETROIT, MICHIGAN.
LECTURER ON MATERIA MEDICA IN THE DETROIT COLLEGE OF MEDICINE

ACETEZONE IN GENERAL SURGERY.

JAMES H. FORD, M. D., in the January, 1905, *Therapeutic Gazette,* presents views concerning the surgical uses of acetezone, which he has formed from the results of his own experience with the use of the agent. In the first place, he says he is convinced acetezone solutions are of distinct value in general surgery where suppuration is encountered.

This chemical substance, he says, is one of the higher peroxides and exerts its peculiar properties when brought into contact with moist organic matter. In solution it rapidly breaks up into less complex compounds.

Acetezone chemically is known as benzoyl-acetyl-peroxide, and as a result of its hyprolysis in water, there forms hydrogen-acetyl-peroxide, hydrogen-benzoyl-peroxide, acetic and benzoic acids, and dibenzoyl-peroxide, all in solution.

Doctor Ford considers acetezone superior to hyprogen peroxide in that it has no tendency to destroy infected tissue, and at the same time is possessed of greater germicidal power.

In treating pus tracts (fistulæ) Doctor Ford dissolves from five to ten grains of powdered acetezone in from six to eight ounces of warm distilled water, and injects the resulting solution into the fistulous tract with a glass syrings, leaves it there for a short time, and then washes out the chemical with distilled water. This procedure has proved satisfactory.

As an irrigating fluid the doctor prefers to use at times a weaker solution, such as a solution made by adding fifteen grains of acetezone to two quarts of water. Doctor Ford says his experience has taught him that with acetezone used as above described there is no destruction of tissue, no damage of adjacent parts, but, on the other hand, there is complete sterrlization of the infected tract or surface, and ready healing of the parts.

PATHOLOGY.

By ALDRED SCOTT WARTHIN, Ph. D., M. D., Ann Arbor, Michigan.
PROFESSOR OF PATHOLOGY IN THE UNIVERSITY OF MICHIGAN AND
DIRECTOR OF THE PATHOLOGICAL LABORATORY.

TRYPANOSOMIASIS.

Bruce (*Journal of Tropical Medicine,* August, 1904) sums up our knowledge of this condition as follows: At present it appears that the *Trypanosoma Gambiense* found in the blood of natives of West Africa and the trypanosome of sleeping sickness are identical. The so-called trypanosome fever is nothing but the first stages of sleeping sickness. Cases which a year ago had trypanosomes in their blood and were apparently healthy now show decided symptoms of sleeping sickness. Europeans were at one time supposed to be immune to the disease but this is now known to be incorrect. The mortality of sleeping sickness is one hundred per cent. The incubation period may be prolonged but it seems inevitable that the infected person dies of the infection. No evidence has yet been brought forward to show that any of the lower animals take any important part in the spread of human trypanosomiasis. The parasites are conveyed from the sick to the healthy by means of a biting fly, the *Glossina palpalis.* The distribution of sleeping sickness and this fly appear to be identical. No other genera of biting flies seem capable of carrying the disease. The trypanosome does not appear to pass through any metamorphosis in the fly. The transference of the parasite from one individual to another is most probably purely mechanical. In favor of this belief is the fact that the fly is not able to retain its infective power for more than forty-eight hours. All the stages of development of the *Trypanosoma Gambiense* take place in the human host.

EDITORIAL COMMENT.

THE UNIVERSITY HOSPITAL AND THE PROFESSION.

The lay press has given an unusual amount of space recently to the Board of Regents and the Department of Medicine of the University of Michigan. Some esteemed contemporaries have taken up the subject. Common to almost all the articles were allegations as to the "free treatment" of "wealthy" patients in the hospital, lack of clinical material, and the need of removal of part of the medical department to another city. Many articles were based on resolutions passed by county medical societies, and this phase of the subject became more prominent when Doctor Beverly D. Harison gave an address before the Saginaw District Medical Society, for Doctor Harison is not only well and widely known as a physician, but is exceptionally prominent as the President of the Michigan State Medical Society, and perhaps still more conspicuous on account of his long and energetic service as Secretary of the State Board of Medical Registration. Other writers might be excused if in dealing with the matter they fell into error. Where they may have had private animosities to satisfy or personal ends to advance, he could be expected to be well-informed and actuated only by a desire to improve medical education and to further the interests of the medical profession and other citizens of the state, whose servant he is in an important capacity. Doctor Harison's address shows that he was not much better informed than some of the newspaper writers, and as **The Physician and Surgeon** has been familiar with the working of the University for a long time, it may be permitted to discuss one aspect of the matter—that relating to hospital abuse.

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Doctor Harison's admission that he knows very little of the details of the question he discusses is surprising, because the work of the University is not done in the dark, and because the Board of Registration is supposed to have authority to investigate medical schools in the most minute degree. His statement, that there "is a scarcity in the quantity, and also in the quality of the clinical material obtainable at Ann Arbor," will probably be admitted by the University authorities. There are few medical schools that have all they need in that line, but it is easily demonstrable that the University has been working steadily and with constant success to improve its facilities, though it still needs the coöperation of all who are interested in the various factors concerned in order to put it on a modern footing. Doctor Harison next states that a great deal of the clinical material is of a class that can afford to pay for treatment. This is one of the most frequent complaints in the newspaper articles, but in the latter is often more strongly worded, the persons being spoken of as "wealthy," or, as in the meeting with the Board of Regents mentioned below, as "millionaires." At this meeting it was shown that most of the patients do pay, but very few of them are really wealthy. People of the class that have incomes independent of actual work probably enter the hospital voluntarily to no greater extent than they do other general hospitals where the attending physicians are men of reputation. In fact, some who have practiced in other hospitals think such cases are relatively few at the University Hospital, and this may be explained by the greater degree of publicity in the latter, since many students from all parts of the country see every patient. At various times, as was shown at the hearing given to representatives of county medical societies by the Board of Regents, efforts have been made to get exact figures at the hospital regarding attendance by rich people. Several years ago, when resolutions were sent in by certain county medical societies, the finances of the patients were investigated, and the only one that could be called rich, a man said to be worth $80,000, was one who was brought to the hospital as an emergency surgical case by a physician in the county in which the agitation had begun. Recently, Superintendent Gilmore said, two hundred patients in succession have been investigated, and the only one who could be called rich was brought in, again, by a physician, his own son. Such admissions are doubtless irregular in order, and it might happen that investigations at other times would show a larger proportion. But most of the cases would be of the kind just mentioned, or else the sons or daughters of well-to-do or rarely wealthy men who are sent in also as emergency cases, by their attending physicians, with typhoid fever, pneumonia, diphtheria, measles, smallpox, or appendicitis or accidental injury. All of these are used for clinical teaching.

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Doctor Harison also considered what he calls the solution of the remedy for the condition he finds, namely, lack of material. (In passing it should be said that he is very far from right in intimating that the Regents devised the remedy. The Regents did not, as so freely charged, make a new rule last summer. They simply reaffirmed an old one to answer a definite question. They did not formally build hospitals and devise the method of obtaining patients. Both grew up as the result of more natural causes. All these statements can be confirmed by the records in the state medical periodicals and the University publications.) He is right in thinking that pay patients alone can never form a sufficiently large and varied clinical material, but some of the details of his further belief are necessary to examine more critically, because though widely held they are not necessarily true, and because his authority lends respectability to many of the charges generally made and doubtless widely held. He thinks it a "waste of time to discuss the point that patients able to pay for medical services would either make suitable cases for teaching purposes or that such cases, even if suitable, would submit to the status of a normal hospital clinical case."

Here he is wide of the mark, as he could convince himself by a visit to the University Hospital, an experience that might be recommended to many critics of that institution. He could see that the patients there make most excellent clinical material. He could occasionally see the sons of well-to-do fathers being examined in every detail, percussed, ausculted, and demonstrated by and before undergraduates. He could see an exmember of a state legislature giving daily demonstrations of his smallpox lesions to classes of students, quite as well as a pauper could, et cetera.

He also thinks that the use of pay patients for teaching purposes "has not been thought of, and even if thought of has never received any serious consideration from institutions having similar needs," in apparent ignorance of the fact that in many hospitals patients who pay something towards their support are used for teaching purposes.

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When, on December 27, 1904, the Regents gave a hearing previously announced to those who objected to the methods followed in the University Hospital, it was made clear (1) That no large number of really rich people come to the hospital, and that those who do are either brought or sent by physicians, or come in as emergency cases. (2) That of all classes about two-thirds are sent by doctors and about nine per cent more as students of the University. (3) That the poor, including those sent as county charges, always have first consideration. (4) That the failure to get more of this class is not the fault of the Regents.

It may be worth while considering the suggestions made by some of the delegates to remedy the conditions to which they objected. It was seriously proposed that the Regents should pass stringent rules to prevent doctors from bringing well-to-do patients to the hospital, in order to prevent such doctors from succumbing to "temptation." This does not seem to deserve a serious answer, as does the second proposed solution, charging high fees to such persons. Two plans were mentioned. . One was to furnish rooms with greater comfort than the usual ones, and charge large sums for their use. This has been proposed to the Regents more than once. But since the Regents are not able to furnish enough rooms for poor persons, it is obvious they are still less able to build finer wards or rooms for the relatively few who could pay more. Moreover, this method of raising money and at the same time of preventing "pauperization of the well-to-do" has been seriously criticised by censors of morals, and would probably not please all the present critics of the University Hospital. Another method proposed is to have the attending physician collect fees for his care of well-to-do people. Pleasing as this would be to the physicians, it is likely that suspicions and allegations of discrimination would arise that might seriously impair the usefulness of the hospital. As to the proposition that cases sent by doctors be sent home, this would not be very practicable. When there is another physician in the same place it might sometimes do, so far as patient and hospital are concerned, but the original physician would hardly be pleased, and in many cases patients are sent from locations distant from any other practitioner. The suggestion to send back an excess of certain cases, say one hundred out of one hundred fourteen cataract cases, was not enlarged upon enough to give it practical form.

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Doctor Harison's assertion that it is "useless also to discuss the policy of the state furnishing gratuitous aid to a class of citizens whose necessities do not require it," deserves some consideration, for while the statement has been repeatedly made by others, the facts are not quite as stated, and the policy really existing does seem worth discussing. The service in the hospital is only seemingly gratuitous so far as medical fees are concerned. The expenses of patients are about the same as those in any other hospital. But the medical and surgical services are not wholly gratuitous, for each patient pays a *quid pro quo* by furnishing clinical material. Whether it is good policy for a state to permit this is to be decided, in a democratic country, not by the views of one class, but by those of the mass, tacitly or openly expressed. In the present question, one class says that sick people must present themselves to the medical practitioners in their respective localities. Aside from the suggestion of a trade's unionism that has been made odious in other lines, it must be borne in mind that these practitioners are not all of the regular profession, but, partly with the assistance of the latter, include homeopaths, eclectics and physiomedics, and, against the wishes of these, but with equal legal right, Christian Scientists, osteopaths and secret remedy advertisers. The policy of the mass of people as it has grown up in face of occasional objections by certain persons, appears to be based upon a belief that they have the right of seeking aid wherever they please, of building hospitals, through legislative action, and of paying part of their fees, not in farm produce, as some doctors are obliged to take them, but in clinical material. It does not seem incumbent on the University to stop this practice unless objections of different character are advanced. In some large European cities certain people make a living exhibiting their morbid conditions to medical students, as others exhibit theirs in museums or circuses. In some medical schools in this country people are paid by the hour to furnish practical instruction to medical students. The method here seems merely a modification of these natural developments. After all, is it not more humane to obtain clinical material in this way than to force helpless paupers who for any reason may object to being used as material? The paupers who object are wrong-minded, but that their view is not unnatural follows from the well-known fact that philanthropists and politicians often insist on the interdiction of clinical teaching in pauper hospitals. The use of such material is one of the special grievances of European socialists, and if their views prevail some such method as the Michigan one must be adopted by medical schools. The present method has been condemned as "socialism," but this does not logically prove that it is bad. If the letter killeth, should not the objecting County Societies be branded as fostering "trades-unionism?" And is it not a manifestation of trades-unionism that is quite as dangerous as any socialism?

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The editor of an Eastern contemporary gives utterance to a specious assertion to the effect that the University educates physicians, and then prevents them from making a livelihood by conducting a free clinic. This statement cannot be disposed of by the reply that the service is a "little one," but should be settled by the fact that the majority of the patients are sent or brought by their physicians. The advantage of having a place where complicated examinations can be made, and troublesome or difficult treatment be carried out, is evidently widely recognized by the profession. The very men who should, according to the charges made, suffer most from the hospital, are taking no part in this agitation. The agitation is no new thing. It has existed at intervals for years, and yet even now, with a wider propaganda than ever before, excellent physicians are sending patients to the hospital. They know it cares for many patients they cannot afford to treat. They are not misled by the cry of "gratuitous treatment even of patients able to pay for such," for they know that in many acute and many chronic cases persons who are able to live well while in health, cannot afford the nursing and medical care necessary. They realize that a typhoid patient, a diphtheria patient, and certain patients with chronic diseases cannot pay for the care they need in private practice, but that they can be treated without loss of independence or self-respect in a hospital, and, best of all, in a teaching hospital where obvious benefits result for both profession and public.

Men in positions like that of Doctor Harison should be able to assist in making the University Hospital not only more careful in the exclusion of the wealthy, but more accessible to the needy sick, not merely for the benefit of medical students, but because of a real and legitimate need of the sick. It is obvious that no University having a limited income and growing needs for every department of science and art, can take in all the indigent sick who apply. The law intended to regulate the care of poor patients as county charges is not well adapted to the purpose. Either well regulated public aid or endowments are necessary, and it is to be hoped that in the agitation now going on this field be not neglected, as it has heretofore.

ANNOTATIONS.

A PHYSICIAN REGENCY NOMINEE.

Doctor **Walter H. Sawyer**, of Hillsdale, was nominated for Regent of the University of Michigan by the Republican State Convention which recently convened in Grand Rapids. The result of the contest for the incumbency will be determined by the Spring election. Doctor Sawyer is eminently qualified for the office of Regent, being not only a successful practitioner, but possessing unusual business ability as well. He is an alumnus of the University, a member of the Michigan State Medical Society (Chairman of its Committee on Legislation and Public Policy), the American Medical Association, and the State Board of Medical Examiners. The propriety of having medical representation on the Board of Regents will not be questioned, and Doctor Sawyer would seem to be a model candidate, inasmuch as he is identified with the profession of the State, is in sympathy with the aims of the University, and is interested in raising the standard of medical education.

JOHN HALLE'S "GOODLYE DOCTRINE AND INSTRUCTION."

These stanzas were copied by Doctor Arthur R. Cushny from a framed example in the Dispensary of Aberdeen, where they were doubtless placed as a guide to conduct. They are taken from the "Historiall Expostulation: Against the beastlye Abusers, both of Chyrurgerie, and Physyke, in ôure tyme," published by John Halle of Maidstone, Kent, England, in 1565. Little is known of the author except what can be gathered from his books, now very rare. The "Expostulation" is an energetic appeal against the quackery of the time, but it is probable the author did more good by arousing a healthy sentiment among physicians, by the "Goodlye Doctrine," than by complaining against, or warning against quacks. There are many other stanzas of the poem, bearing on the details of the surgeon's art and knowledge. The fifth, tenth, and thirteenth are not in Doctor Cushny's copy, but have been added because they have the same guiding spirit and even more of worldly wisdom.

G. D.

RESPECTING FOOD PRESERVATIVES.

Doctor **Victor C. Vaughan**, of Ann Arbor, recently accepted an invitation to deliver an address before the Pathological Society of Philadelphia. The subject selected for discussion was "The Relation of Food Preservatives to the Public Health." The antiquity of preservatives was indicated in the declaration that prehistoric time was probably acquainted with their employment. A preservative that has legal sanction should be innocuous to the infant and to the aged, to the healthy and to the diseased. The statement was made that a real preservative must do more than maintain a certain color, impart another color, or even obviate disagreeable odor to food; it must prevent the growth of dangerous bacteria. Formaldehyde, in strength of one to fifty thousand, will inhibit the growth of the lactic acid bacillus, but the effect of this solution on the colon bacillus is *nil.* Sodium sulphite is another material that belongs to the group of so-called preservatives. Poisonous preservatives should be regulated by law. This class includes any substance which chemically destroys or impairs the function of cells. Inasmuch as the handling of poisons by druggists and physicians is regulated by law, firms that market food stuffs should be subjected to like regulation, certain poisons being good preservatives for certain foods at proper times. A good preservative should have three requisites: (1) It should be a real preservative; (2) It should not impair digestion or allied functions; (3) It should not be a cell poison, or, if one, should be regulated by legislative restrictions.

MEDICAL NEWS.

A DETROIT PHYSICIAN HONORED.

CATALOGUED
E. H. B.

DOCTOR M'LEAN.

Doctor Angus McLean, of Detroit, has been appointed a member of the Michigan State Board of Health, by Governor Warner, to succeed Doctor Daniel A. MacLachlan, whose term has expired. Doctor McLean is a member of the Wayne County Medical Society, the Michigan State Medical Society, and the American Medical Association. He is forty-two years of age, and graduated from the Detroit Medical College in 1886, nine years later devoting six months to clinical study in Edinburgh, Scotland. Immediately after graduating in Detroit he spent two years in Harper Hospital, and in 1888 began general practice in the office of Doctor H. O. Walker. He has been city physician, assistant surgeon to the police department, and, upon the retirement of Doctor Walker, was made chief surgeon, a position he held for a number of years. Since 1889 he has been connected with the Detroit College of Medicine as demonstrator of anatomy and later as clinical professor of surgery. He is also surgeon to Harper Hospital and to the Wabash Railway Company. Two more vacancies were caused on the board by the death of President Frank Wells, of Lansing, and the expiration of the term of Doctor Collins H. Johnston, of Grand Rapids. The latter has been reappointed, and the other appointee is C. C. Vaughan, of Saint Johns.

THE PREVENTION OF PHTHISIS.

THE American Anti-Tuberculosis League will hold its next meeting in Atlanta, Georgia, April 17 to 19, 1905, under the presidency of Doctor George Brown of that city. Over one thousand delegates, representing national and state medical societies, have already been enrolled. Doctors Riviere and Livet, of Paris, France, have promised papers of unusual interest. The latter will detail a new treatment for consumption which has been tested in his clinic for the past two years, the result of which has never been published. Many distinguished men in the United States have promised papers. Governor J. M. Terrell has tendered the hall of the House of Representatives of the Georgia State Capitol for the use of the League during the meeting, which will be opened by an address from His Excellency. The first session is intended to be a broad one, from an educational standpoint, and the heads of the largest educational institutions of the United States will be invited to be present.

A DISTRICT MEETING OF DOCTORS.

THE First Councilor District Medical Society was organized in Harmonie Hall, Detroit, February 20, 1905. The purpose of the new guild is to weld together the six county societies in this district. The meeting, which consisted of three sessions, was called to order by Doctor Leartus Connor, of Detroit, Councilor of the First District, who delivered an address entitled "What has been Accomplished by Medical Organization," at the conclusion of which Doctor Charles T. Southworth, of Monroe, was made temporary chairman, and Doctor Guy L. Connor, of Detroit, temporary secretary. The committee on organization, which consisted of the secretaries of the six county societies in the first councilor district, presented the following report, and its adoption was made unanimous: (1) The organization shall be known as the First Councilor District Medical Society, and shall meet annually about the Christmas holidays. (2) The executive committee shall be composed of the secretaries of the county medical societies of the district. (3) The President and Secretary of the District Society shall be the President and Secretary of the County Medical Society in the county where the District Society next meets. (4) The Secretary of the District Society shall be the executive officer of the executive committee. (5) The next meeting of the District Society shall be held at Ann Arbor between December 15, 1905, and January 10, 1906. Papers were read by Doctors Jennings, Duffield, Miner, Metcalf, Carstens, Sill and Wyman, of Detroit; Neff, of Pontiac; Roth, of Ann Arbor; and Raynale, of Birmingham. Doctor Dock, of Ann Arbor, reported two cases of Stokes-Adams disease and presented the heart of a patient who died of the ailment. The evening session embraced a six-o'clock dinner and postprandial speeches. Toasts were responded to by Doctors Haughey, of Battle Creek; Croman, of Mount Clemens; Sampson, of Windsor (Ontario); Tibbals, of Detroit; Loree, of Ann Arbor; Chase, of Adrian; and Mann, of Detroit.

THE DEMISE OF A SANITARIAN.

PRESIDENT WELLS.

HONORABLE FRANK WELLS of Lansing, for twelve years president of the Michigan State Board of Health, died recently of typhoid fever at the Capital City, aged about seventy years. At the time of his demise he was serving his third six-year term as a member of the health board over which he presided so long. In earlier life he was identified with several mercantile enterprizes in Lansing, and at one time officiated in the capacity of president of the Business Men's Association, while at another he enjoyed the honor of being the first president of the State Pharmaceutical Association. His service in the cause of health has been marked by many sanitary achievements. The State Board of Health adopted suitable resolutions on the death of President Wells and attended his funeral in a body. Doctor Victor C. Vaughan is the newly elected president of the board.

THE WIDOW'S MITE.

DOCTOR FINSEN'S widow has been allowed a pension by the Danish Government. King Christian recently signed a special law granting an amount equivalent to one thousand dollars a year. The demand for a pension was made by the minister of education and the bill passed both chambers of the Danish rigsdag without a dissenting vote. This liberality is indeed remarkable, inasmuch as the widow of even the highest government official is never allowed a pension of more than one-third the amount. Finsen had earned considerable money since the discovery of the famous light bearing his name, but liberal donations to hospitals and charitable institutions would have left his wife absolutely penniless had not a Nobel prize been awarded to him a year ago. A project is under way to erect a statue of the benefactor in Copenhagen.

MINOR INTELLIGENCE.

THE late Peter Bent Brigham bequeathed five million dollars to establish a hospital in Boston for the care of persons in indigent circumstances.

DOCTOR CYRENUS G. DARLING was made Clinical Professor of Surgery in the University of Michigan by the Board of Regents at its February meeting.

THE Fifth International Congress of Psychology will be held in Rome from April 26 to 30, 1905. The Secretary of the Congress is Doctor Tomburini, of Rome.

DOCTOR ARTHUR D. HOLMES, of 72 Washington avenue, Detroit, announces to the profession that he will hereafter confine his practice to diseases of infancy and childhood.

THE supervisors of San Francisco have appropriated nine hundred dollars for the purpose of altering the dangerous sanitary conditions which prevail in the Chinatown quarters of that city.

A COLONY for lepers is to be established on Cape Cod, the state of Massachusetts having purchased sufficient ground for the purpose. There are now three leprous individuals within the confines of the state.

THE United States government is contemplating the construction of an artificial island near Ellis Island, New York City, on which will be established a hospital for the care of immigrants suffering from contagious diseases.

THE ceremonies incidental to the laying of the corner stone of the new building for the Michigan College of Medicine and Surgery, of Detroit, were held on December 13, at 2 o'clock in the afternoon at the southwest corner of Second and Porter streets.

THE twenty-second German Congress of Internal Medicine will be held at Weisbaden, April 12 to 15, under the presidency of Professor Erb, of Heidelberg. Heredity will be the main topic of discussion, although papers on other subjects of more or less importance will be presented.

THE Indiana State Nurses' Association will present a bill to the legislature requiring the establishment of a uniform standand of education for persons desiring to pursue the profession of nursing. The bill demands that after June 1, 1908, all applicants be subjected to state examination.

VIENNA is considering the establishment of a hospital, which will cover about 2,400,000 square feet of ground and cost in the neighborhood of $8,000,000. The institution will comprise forty buildings which will be utilized for clinical and hospital purposes, and offices and residences for the staff. Two thousand three hundred beds will be provided, and each patient will be allowed about one thousand square feet of space.

CHARLES H. HACKLEY, of Muskegon, the philanthropist whose hospital gift to that city was noticed in our last issue, has since died, and among his bequests is one of $300,000 to Hackley Hospital, less any sums given to said institution during his lifetime.

MANUEL GARCIA, of London, the inventor of the laryngoscope, will celebrate his one hundredth birthday in March, 1905, and it is the intention of the members of the Laryngological Societies of London to tender him a magnificent memorial on the occasion.

A SERIOUS epidemic of Siberian plague is reported from the vicinities of Viatka and Slobodski, the disease being traced to sheepskins which were employed in the manufacture of coats for the soldiers in Manchuria. The shipment of the garments has been discontinued.

THE Prussian Minister of education has been presented with a petition by a society of Berlin women, asking that the young girls in attendance at the schools of the empire be prohibited from wearing corsets, inasmuch as they are declared to be detrimental to health.

A NEW building is to be erected by the College of Physicians, of Philadelphia, at a cost of about $240,000. The structure will contain a library, museum, lecture and assembly room. The work of construction will be commenced as soon as a suitable site has been procured.

YELLOW FEVER is now prevalent in Cuba, the outbreak being the first since the abandonment of the island by the American administration. The excellent sanitary restrictions which were inaugurated by this government are apparently becoming lax under native control.

BECAUSE of the scarcity of physicians in the coast region of Newfoundland, the government offers a salary of $500 per year to doctors who locate in the isolated communities. The interests of the sick in the coast belt are now looked after by persons who have only a smattering of medical knowledge.

THE Royal Victoria Hospital, Montreal, was recently damaged by fire to the extent of $30,000. The hospital consists of a central structrue, to which are annexed two wings, and the fire was confined entirely to the main part of the building. Fortunately no patients occupied this section and no injuries resulted.

FIVE public school principals in Pennsylvania have been reprimanded by health boards for permitting children who have not complied with the vaccination ordinance to attend school. The action of the boards is indeed commendable, and it would seem that edicts of this nature should be more generally enforced.

THE American Neurological Association, which met recently at Saint Louis, elected the following officers: President, Doctor Z. W. Spiller, of Philadelphia; vicepresidents, Doctors Philip Zenner, of Cincinnati, and William Lullard, of Boston; secretary, Doctor T. M. Hammond, of New York City. The 1905 meeting of the society will convene at Philadelphia.

BECAUSE the privileges of the schools were denied them for having violated the vaccination ordinance, two school children of Hyde Park, Massachusetts, sued the municipality and were awarded damages by the lower courts. The decision will be carried to the supreme bench.

DOCTOR THOMAS H. MANLEY, of New York City, died of pneumonia on January 13, aged fifty-four years. The doctor was a native of Ireland, and was a graduate of the medical department of the University of New York, class of 1875. He was one of the leading surgeons of the metropolis, and occupied the chair of surgery in the New York School of Clinical Medicine. Doctor Manley was a teacher of pronounced ability.

DOCTOR GEORGE A. CHARLTON, of Detroit, recently accepted a responsible position with the Canadian government in Northwest Territory, where he will pursue original investigations respecting the cause of Rocky Mountain fever and certain other diseases endemic in that region. The doctor is specially qualified for the work undertaken, having formerly been successively assistant to Professor Adami, of McGill University, and Fellow of the Rockefeller Institute with residence abroad.

THE suggestion has been made to the Chicago School Board that a new system be adopted for the cleaning of public school rooms. The method proposes that before sweeping the floors they be covered with sawdust which has been saturated in one to forty thousand bichloride solution; that the blackboards be wiped with wet sponges to prevent the spreading of chalk dust, which is exceedingly injurious to the tissues, and that a vigorous scrubbing of benches and woodwork with bichloride be resorted to at least once a month.

AT the fourteenth annual meeting of the American Electrotherapeutic Association which was held at Saint Louis in September, the following officers were elected: President, Doctor Emil Heuel, of New York; first vicepresident, Doctor Charles Hamilton Hughes, of Saint Louis; second vicepresident, Doctor Morris Weil Brinkmann, of New York; treasurer, Doctor Richard Joseph Nunn, of Savannah; secretary, Doctor Clarence Edward Skinner, of New Haven, Connecticut. The next meeting will be held at the New York Academy of Medicine, September 19-21, 1905.

THE medical societies of Illinois are to conduct a campaign in behalf of persons suffering with tuberculosis. Their efforts will be exerted mainly toward instructing the public regarding the advantages to be derived at the various camps established throughout the state, with the idea of securing more substantial financial assistance from the taxpayers. A circular has been issued by the Regular, Homeopathic, and Eclectic societies of the state, showing the frightful loss the community sustains each year through death from the scourge, over seven thousand persons being victims in 1903.

A SANITARIUM for the treatment of tuberculosis and other lung diseases is to be established in Sonoma County, California. The building will be situated at a height of over two thousand feet above sea level and one hundred thousand dollars will be expended in its construction.

THE Board of Health of Birmingham, Alabama, recently passed an ordinance requiring that all cases of tuberculosis be reported to the city health officer, including the name of the afflicted individual, his color, and place of residence. Only two other American cities possess such an ordinance—New York and Boston.

THE Wayne County (Detroit) Medical Society will be represented at the forthcoming meeting of the Michigan State Medical Society by the following delegates: Doctors Willis S. Anderson, Albert E. Carrier, Charles W. Hitchcock, Guy L. Kiefer, William F. Metcalf, Frederick W. Robbins, and Edwin S. Sherrill. The meeting will be held at Petoskey, July 28-30, 1905.

A WOMAN in New Hampshire recently instituted suit against a Christian science healer to recover damages for breach of contract to cure her of appendicitis. The supreme court held that inasmuch as the lady knew that the healer was not a legally qualified physician she could not recover; that if it was illegal for the scientist to treat her it was equally illegal for her to consent to treatment.

YELLOW FEVER is gaining rapid headway in Panama, regardless of the vigorous efforts which are being exerted to exterminate it. The Isthmian Canal Commission is shipping large quantities of medicines to the Canal Zone for sanitary purposes, and as much as two thousand pounds of sulphur and insect powder are employed weekly in the work of fumigation.

THE International Society of Surgery will hold its first congress in Brussels during the month of September, 1905, under the presidency of Professor Kocher, of Berne. The program will comprise a discussion of the following subjects: "The Value of Examination of the Blood in Surgery"; "Treatment of Hypertrophy of the Prostate"; "Surgical Intervention in Affections of the Stomach Other than Cancerous"; "Treatment of Tuberculosis of the Joints"; "Treatment of Peritonitis"; and "Diagnosis of Surgical Diseases of the Kidneys."

REALIZING the importance of a society in which clinical workers in ophthalmology may be able to report their interesting daily cases and enjoy full and free individual discussion upon the same, and present theoretical and statistical papers upon ophthalmic subjects, Doctor Oliver, of Philadelphia, has recently organized the "Association of Clinical Assistants of Wills Hospital." Membership by ballot, is open to all those who have been or are connected with one or more of the clinical services in Wills Hospital for a period of not less than three months' time. Meetings are held at the hospital at 8:30 P. M. on the first and third Wednesdays of each month. All who are eligible are invited to attend and join.

In "Public Health Reports," September 30, 1904, published by the United States Health and Marine Hospital Service, is a full account of a scheme for the encouragement of inoculation for the restriction of the plague in Bombay, India, set forth in a letter signed by the chairman and secretary of the Bombay Chamber of Commerce. Modified to fit the conditions relative to vaccination for the prevention of smallpox, it would be somewhat as follows: The principal is that a reward be given to each person vaccinated who induces four other persons to be vaccinated. For a very small sum four coupons are issued to each person vaccinated; as soon as four other persons are vaccinated who present these four coupons, a reward is paid to the person who originally purchased the coupons. The reward paid is perhaps four times as much as was first received for the coupons. Each of the four persons vaccinated receives a set of four coupons, and the process thus continues in a geometrical ratio to widen its sphere of influence.

RECENT LITERATURE.

REVIEWS.

THE SURGICAL TREATMENT OF BRIGHT'S DISEASE.*

Doctor Edebohls deserves the thanks of the profession for putting in one volume his experiences with the surgical treatment of nephritis. Two-fifths of the present work are made up of contributions already published. The remainder is new matter, giving in detail the case-histories with a full and well-sifted analysis of results. Our readers remember that Edebohls noticed that certain patients with chronic nephritis, operated upon for symptoms due to movable kidney, recovered from the symptoms of nephritis after such operations, and that he formally proposed that decapsulation should be performed for the cure of chronic nephritis, whether the organs be movable or not, and that he, and afterwards others, carried out such operations. Edebohls makes clear, in the early part of the present volume, his just claim to priority for the operation. The innovation was altogether different from that of Israel, who accidentally discovered the value of splitting the capsule in certain cases of renal colic, and that of Harrison, who proposed capsule-splitting for certain cases of albuminuria. The present work makes clear that as Edebohls deserves credit for the original proposal, he deserves still more for his candid and earnest efforts to make the results accessible to all. Even if the operation has but a limited field of usefulness the profession owes him a heavy debt for his efforts to mitigate a disease often most refractory to treatment.

A complete review is impossible by reason of the great amount of material in the book. A consideration of some of the details must suffice. There are records of seventy-two operations, performed from eleven years and eight months, to eight months before, no cases in the year 1904 being included on account of the shortness of the time. (No deaths in 1904 series to date). All but three of the patients have been followed up to within a recent period, with frequent urine examinations. The large proportion of physicians operated upon—ten—shows that faith in operation and operator is not lacking among those who should best understand the conditions. The average duration in fifty-eight cases in which examination of the urine revealed nephritis—three years and three months—indicates that the actual nature of the cases was probably correctly estimated, so that serious error cannot be ascribed to faulty diagnosis.

On the other hand the operator shows some beliefs that are quite pardonable in an innovator, but need not to be so tenaciously held by others. One of these is an identification of various cases of chronic nephritis under the heading of Bright's disease—subdivided it is true—without, in our opinion, sufficient warrant. Another is an apparent belief in the necessarily early death or unfavorable course of all cases of chronic nephritis, leading to undue emphasis, we think, on improvement after operation. For, while every patient with chronic nephritis runs a risk of sudden death and of severe exacerbations, a long duration is by no means unusual, with fair health in the interval. The statistical fallacy, if by that term we may name the tendency to overrate the value of small figures, has also not been avoided by the writer. So, in one of his early papers he says, "the fact that chronic Bright's disease may be unilateral in one-half or nearly one-half of a series of eighteen cases, may come as a matter of surprise" to many of his readers, "as indeed it proved a revelation to the writer." But this need not have been so great a surprise, if the writer or his readers had ever played any game of chance, or made any study of the theory of probabilities. It was also not surprising when it appeared that of the total seventy-two cases only eleven were unilateral.

To return to the cases, seven or nine and seven-tenths per cent died within two weeks of the operation. But many desperate cases were accepted, as appears not only from the histories of some of the cases, but from the statement that three more died upon the day set for the operation. Twenty-two others died at periods more or less remote from the operation and were therefore not cured, at intervals varying from fifteen days to eight years; in the average one year and one month. Nine died of causes not in direct relation to nephritis.

Of the remaining (known) forty cases three are classed unimproved, twenty improved and seventeen cured. It is interesting to study the cases in detail, but the reviewer must limit himself to a few leading points. Twelve cases are said to (page 314) "have made and are making steady and satisfactory progress toward cure." In looking over the notes of these cases it is clear that three have unmistakable evidences of chronic nephritis, so that cure can only be looked for as a remote chance. The other nine have signs that would make careful oversight essential. The reviewer happens to know the history of one of these that illustrates how cautious one must be regarding prognosis in such cases. The last urine examination noted in this case was on May 31 and warrants the note: "decided and satisfactory improvement in general health and work of kidneys." It so happened that the reviewer discussed the operation with the patient about that time, without making any examination. The patient was most sanguine of good results, yet he died about six weeks later, dropping dead after some weeks of arduous labor, ending with an appendix operation.

The seventeen cases reported as recovered furnish interesting reading. All but one were women, though the total number is made up of men and women in equal numbers. Almost all had prolapsed kidneys to a marked degree. Four had unilateral renal disease. Three at least were seriously involved and furnish useful testimony to the value of the operation. The facts presented by this series especially lead one to think that the most definite indication for decapsulation is the existence of kidney disease in movable kidneys. Here Edebohls' operation seems to have a distinct field. For other cases, as the author himself says, years of patient observation are required to determine the relative value of surgical treatment.

It is sincerely to be hoped that operations on cases carefully selected, thoroughly examined and steadily followed afterwards can be multiplied by the talented author and his followers. Operations on animals can help us to understand some of the results, but only clinical results on actual cases of Bright's disease can decide the real value and scope of Edebohls' plan. The careful perusal of the present work is warmly recommended to all who are interested in the problem considered.

*By George M. Edebohls, A. M., M. D., LL. D., Professor of Diseases of Women in the New York Post-Graduate Medical School and Hospital, et cetera. Frank F. Lisiecki, Publisher, New York, 1904.

PNEUMONIA AND PNEUMOCOCCUS INFECTIONS.*

This timely little book gives an excellent account of the most exact knowledge of pneumonia brought well up to date. All phases of the disease are discussed, and the various parts have been given a remarkably just proportion of space. Over all, especially in the clinical sections, is reflected the thorough and well digested experience of the writer. The chapter on treatment is clear and follows the lines of the most thoughtful therapeutists. It should be studied by all those who have no definite plan for treating patients with pneumonia, and who try without satisfaction internal sure cures and external wonder-workers. A review of the book is not necessary. It should be read carefully. Lack of an index is the only serious fault that can be charged against it.

*By Robert B. Preble, A. B., M. D., Professor of Medicine in the Northwestern University. Illustrated. Chicago: Cloyd J. Head & Company, 1905.

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ALBERT BENJAMIN PRESCOTT

The Physician and Surgeon

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ORIGINAL ARTICLES.

MEMOIRS.

REASONS WHY THE JOINT BOARD OF THE ASYLUMS FOR THE INSANE SHOULD JOIN IN THE CONDUCT OF THE PSYCHOPATHIC WARD AT THE UNIVERSITY HOSPITAL.

By WILLIAM J. HERDMAN, M. D., LL. D., ANN ARBOR, MICHIGAN.
PROFESSOR OF DISEASES OF THE MIND AND NERVOUS SYSTEM IN THE UNIVERSITY OF MICHIGAN

THE necessity for a study of insanity with a view of determining its nature as a disease and the causes leading thereto would seem to be inseparable from the duty devolving upon those who have accepted from the state the important trust of caring for this class of the state's wards. "The law requires that the certified insane should be placed in asylums. Insanity as a disease is consequently excluded from the field of research that is so diligently cultivated in our general hospitals, supported by their own laboratories and those of our universities and medical colleges. The responsibility of promoting the scientific study of insanity, therefore, rests upon the asylums and the authorities in charge of them. It is a trust forced upon them by the very necessities of the case. It is moreover a *solemn* trust, for the whole aim and object of that scientific study is the attainment of means to alleviate human suffering, and it is certainly only through such study that more successful methods of treating cases of insanity will ever be obtained."

The various stages of evolution through which governmental care of the insane has passed up to the present time is matter of common knowledge. The early conceptions of insanity as a demoniacal possession to be met with scourgings, brutality and persecution, has gradually given way to feelings of compassion and benevolence in the public mind toward those so afflicted, until they are now cared for, in all that pertains to their physical comfort, in the most generous and humane manner.

Step by step with this development of pity and compassion in the heart of the average citizen, prompting him to give freely and ungrudgingly for the comfort and care of the mentally afflicted, has come, through the researches of the physician, more intelligent views as to the nature of mental disease. It has been found to be inseparable from bodily disease though the connection is at times most obscure, and needing the most skillful and painstaking research for its elucidation. The certainty is nevertheless now well established that if we are to make headway against the steadily increasing stream of insanity we must look for causes at work in the body, the physical environment of the mind, with a view of putting into operation preventive measures.

I think it is a very generally recognized principle that duty keeps pace with knowledge and opportunity. If the insane have been committed to the care of the state not only for the protection of the public but chiefly for the best welfare of those so committed, no right-minded citizen will be content that provisions be made only for the needs of the body of these unfortunates as long as there is a probability that the mind can be cured and the afflicted one made whole again; or that the way is open and yet not entered by which discoveries may be made that will prevent many others from being brought to a like sad and dependent condition. The same benevolent spirit that has so nobly responded to the dictates of humanity by large expenditure and great labor will not stop when the object sought—the relief of the afflicted—gives promise of more effective plans to this end.

Even to that good citizen, moved by motives of economy alone, the situation appeals, for he is ever seeking to discover where useless and wasteful expenditure may be cut off and where the money can be made to yield the largest return, and he is not the wise, nor the most economical, legislator who heedlessly turns the key upon the public treasury but rather the one who by discriminating insight makes one dollar do the work of two or ten. And who does not see, after the abundant illustrations that recent experiences have to offer, that it is the wisest economy to direct a share of our resources to the prevention of disease rather than to pour it all out in comparative hopeless effort to repair the damage after it is once done.

In November, 1887, and in June, 1888, the subject of pathological work for the asylums was considered by the Joint Board of the Asylums of the State, and a pathologist was informally selected for the place. For some reason, however, it was not deemed wise to put into actual operation at that time the proposed plan and the matter was dropped.

The subject was again brought to the attention of the Joint Board ten years later in a paper by Superintendent Edwards, presented at the Newberry meeting, July 15, 1897. In this paper the author says: "I do think the great State of Michigan should contribute its share of inquiry in this line and add to the sum total of knowledge that shall eventually, we hope, do much to cure certain forms of insanity that now are practically incurable and that shall be of greater benefit to ward off the disease in those who are threatened by it." Attention was called to the work that was already in progress, at that time, in connection with various state asylums in this country, namely, in New York, Massachusetts, Illinois, and Georgia, seeking through pathological study to throw more light upon the problems of insanity, and it was urged that Michigan be true to her traditions and fall into line in advancing the good work. It was at that time made plain that in order to attain any measure of "success in this line of study in our state, a thoroughly systematized plan that should rest on the cooperation of the several asylums of the state with one another and with the State University gave greatest promise. Such a combination was made possible by the existence of a state university, closely in touch with the people's needs, at which there were already gathered men and laboratories of research that would greatly aid the development of this most important work.

Acting upon the suggestion embodied in Superintendent Edwards' paper the Joint Board of the Asylums in January, 1898, joined with the University in creating a laboratory of neural pathology at the University and selected a pathologist to conduct the work. It was a small beginning with an investment and a scope too meagre to be expected to yield large returns. Nevertheless, Superintendent Munson of the Northern Asylum, was able to say of this work in a paper read before the Joint Board in January, 1901: "An important beginning has been made along these lines and the work accomplished by the pathologist and his staff the past year is something you may all be proud of. I have never known more scienitfic clinical and research work to be accomplished than during the past year. It can only be through your support and the cooperation of all the asylums that this department can be widened and made of eminent practical value."

The three years' trial of this plan served, at least, to demonstrate more definitely just what was needed in order to do more effective work, and also the advantages that would result from making the University the centre for the study of the problems involved, provided the University Hospital could be arranged to accommodate a sufficient number of insane patients to furnish those problems in their concrete, living form. The time of the pathologist had been taken up, for the most part, with the examination of postmortem tissue sent to him from one or other of the asylums.

The study of tissue changed by disease contributes to our knowledge of the relation of these changes to morbid mental action only in so far as the living being is critically and closely studied in his bodily and mental processes while these tissue changes are taking place. Again, many forms of insanity, and these the more curable forms, leave no postmortem changes that are peculiar to them; only the phenomena that the patient exhibits during life serve to reveal the nature of his disorder.

Modern laboratory research, seeking for causes of disease, must combine clinical observations with their associated morbid products, and in the study of insanity the problem is more complex than in other forms of disease because of the preponderance of the psychic elements in the clinical picture.

It became necessary, therefore, if a laboratory for research as to the nature and causes of insanity was to be created at the University, worthy of the name, where the living problems of insanity could be studied with profit to the asylum work, with benefit to the afflicted and as an aid to those who were preparing themselves to practice the healing art among the people, that we must have a hospital ward suitably constructed for the reception of at least a representative number of cases of mental disease. This was the necessity which justified the appeal to the legislature, four years ago, for funds with which to build the Psychopathic ward. It was built with a view to include in the clinical studies all the phenomena of mental disease as they exhibited themselves in the patient from day to day. By the careful observation of a limited number of typical cases of various forms of mental disease, together with a careful study of the state of the secretions, the excretions, the blood and such other vital functions as can be submitted to modern methods of analysis, new light, it is hoped, will be thrown upon the nature of such diseases and the means for cure or prevention of some of them at least be discovered. There was every reason to believe from all that could be learned of the onward march of professional progress and lay opinion upon the subject, that this was a very much needed step in the right direction.

It needs but to study the history of that legislation to discover how the people of Michgan, as judged by their representatives at Lansing, appreciated the value of this advanced movement in dealing with the problem of insanity. You need but look about you in this country, observe the trend of thought and action both here and abroad to be quickly convinced that the clinical study of insanity as other diseases are studied, with the help of laboratory methods, is everywhere advocated and is being put into practice.

To this attention was directed by a paper presented to the Joint Board of the Asylums by Superintendent Christian, read at a meeting held at Kalamazoo, January 17, 1901, entitled "The Movement Towards Psychiatric Hospitals and Psychiatric Clinics," and published in the "Transactions." In this paper the worthy objects which this new movement aimed to accomplish were clearly and succinctly stated, and it appeared to the author that they were objects destined to meet with universal recognition and approval, for he says, in closing: "I believe it to be only a question of time before the movement for the psychiatric hospital will make its appearance in Michigan."

The movement was already well under way in Michgan on the day that paper was read, for the bill establishing the Psychopathic ward at the University hospital had already been drawn and within a very few days thereafter had passed the Senate on its merits and without a dissenting vote.

In a recent paper entitled "The Present Campaign Against Insanity" I have sought to show how universal is the awakening the world over to the necessity for more exact knowledge of the influences and causes that lead to diseases of the mind. Out of this desire have sprung up in every considerable town in Germany, in many places in Italy, in France, Great Britain, South America and Japan, psychopathic hospitals, clinics and laboratories, where insanity is studied as never before. In this work Michigan must march in the van as it always has in matters of enlightenment and in plans for the higher welfare of its citizens, and of mankind in general.

Michigan has stood foremost among these western states in the splendid provision she has made for her unfortunate classes. Her asylums for the insane have no superiors anywhere for commodious accommodations, orderly arrangement, completeness of domestic equipment and skill and intelligence in administration. The wisdom and ability of the medical management is generally acknowledged and the members of our medical corps take high rank throughout the country and in our professional councils. It is not only a matter of pride but of duty that we should seek to maintain this prestige, and set the pace for others who are to follow, or be guided as they now are by our initiative.

No other thought has ever been entertained but that in the conduct of the Psychopathic ward the arrangement that had once been deliberately and, as we believe, wisely begun, of cooperation on the part of the asylums with the State University should be continued. The bill was drawn with this intent and all of its provisions have contemplated this close association and mutual helpfulness. Each needs the other to secure the best results in this attempt to obtain more light and more exact knowledge of insanity. United in this effort we occupy a unique position. A vantage ground is open to us in the prosecution of this work that other communities, not similarly organized, cannot secure. A state university with all its fine equipment should be utilized for the needs of the people who have created it and are sustaining it, and I am glad to see that this, with the University of Michigan, is now true and is getting to be more and more so every day. It is impossible in states where a state university with an efficient medical department does not exist to unite so closely or so effectively the institutions that are maintained for the public good. But where such conditions do exist as they do in this state, what is more natural or more rational than close cooperation in work among those institutions when the very objects for which they were created will be thereby the more effectively advanced?

A scheme for this broader plan of cooperation with the Psychopathic ward as the center for the activities which it would create, was presented to the Joint Board of the Asylums by a special "Committee on Organization of the Pathological Laboratory," at the Newberry meeting in July, 1903, through its chairman, Superintendent Munson. The plan then proposed was one that had been carefully matured after frequent consultations with members of the medical faculty of the University and it was given the full sanction of the Board of Regents and embodied in it a request from that Board that the Joint Board of the Asylums join with them in the conduct of this most important line of investigation, and a committee was appointed by the Board of Regents to confer with the Joint Board of the Asylums as to the plan of cooperation to be adopted.

There were, perhaps, some minor details in the arrangement proposed that were of doubtful expediency but these were not essential and could be easily modified to meet the wishes of all.

In view of the great importance to this commonwealth of the interests at stake such cooperation should no longer be delayed. If it is special legislation that is needed to bring it about then I am assured by high authority at the present time and by the evidences of intelligence and wisdom which Michigan legislators have always exhibited on questions of this nature that there need be no fear but that the requisite provision incorporated in a suitable bill will be favorably considered.

I would most earnestly urge, therefore, that some action be taken by the Joint Board of the Asylums looking to the immediate fulfillment of the plans for instituting this most desirable work in connection with the Psychopathic ward which gives promise of contributing so many benefits. Benefits which have been clearly set forth on many occasions but which for the sake of clearness of understanding I will formulate again in closing. We hope and expect by this cooperation of the State Asylums and the State University in the proposed work in connection with the Psychopathic ward—

(1) To obtain more accurate knowledge as to the nature and causes of insanity.

(2) To make clear the way for the removal of certain of these causes.

(3) To effect cures in some cases that are now practically incurable.

(4) To relieve the state of the burden of care and expense of those thus restored to health.

(5) To stimulate and make more purposive the work of observation, investigation and treatment of all the patients in all of our hospitals for the insane.

(6) To give to him and her who will first have the opportunity to see and to treat cases of mental disorder a correct knowledge of its

nature and so enable them—the family physicians—to render intelligent help at a time when treatment of the right kind is most beneficial.

(7) And last, but by no means least, to create a correct public sentiment and belief with regard to all ailments which affect the mind and so educate the people as a whole to rational views both as to prevention of such diseases and the proper treatment of those so afflicted.

A TRIBUTE TO

ALBERT BENJAMIN PRESCOTT, M. D., F. C. S., PH. D., LL. D.*

LATE PROFESSOR OF ORGANIC AND APPLIED CHEMISTRY, DEAN OF THE DEPARTMENT OF PHARMACY, AND DIRECTOR OF THE CHEMICAL LABORATORY IN THE UNIVERSITY OF MICHIGAN, BY HIS COLLEAGUES OF THE UNIVERSITY SENATE.

PREPARED BY { VICTOR C. VAUGHAN,
MARTIN L. D'OOGE,
EDWARD D. CAMPBELL, } COMMITTEE.

ALBERT BENJAMIN PRESCOTT was born at Hastings, New York, December 12, 1832. When nine years of age he received an injury from a fall that rendered him a cripple for life. For many years this disability necessitated the use of two crutches, but after reaching maturity he was able to dispense with one of these and after a few years more a single cane gave him all needed aid. In early life he was noted for his studious habits which were probably intensified by his physical disability. He became an earnest and intelligent reader of the best literature and although he was denied a classical training he became by his own industry a close, conscientious and discriminating student. From early manhood until his twenty-eighth year he taught school and prepared himself for medicine under the preceptorship of Doctor Greenleaf of Hastings, New York. In 1860 he came to Ann Arbor and entered the department of medicine and surgery. After the first course of lectures he was detained for one year by his preceptor who had a large general practice and claimed his student's services as his assistant. In the fall of 1862 he returned to the University and became a student assistant to Professor Douglas, which position he filled until his graduation in March, 1864. Soon after receiving his degree he became assistant surgeon in the army and continued in the service until the close of the war. In 1865 he was appointed Assistant Professor of Chemistry and five years later he became Professor of Organic and Applied Chemistry. In 1876, on the organization of the Department of Pharmacy, he was made Dean of this school and in 1884 his duties were extended by the adding to his title that of "Director of the Chemical Laboratory."

Early in his work as a chemist he was made fellow of the Chemical Society (F. C. S.) and member of Die Deutsche Chemische Gesellschaft. He was honored by this University with the degree Ph. D., and held the degree LL.D. from both this University and Northwestern. He was one of the founders of the American Chemical Society, served as its president and contributed largely to its official publication. He was honored with the presidency of both the State and National Pharmaceutical Associations. He was at one time chairman of the chemical section of the American Association for the Advancement of Science and later became president of this the largest official scientific organization in this country. He presided at the World's Congress of Chemists in Chicago in 1893 and at a section of the recent Scientific Congress in St. Louis.

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*Read by DOCTOR VAUGHAN at a Memorial Meeting of the University Senate.

As an author Doctor Prescott has become widely and most favorably known. The first edition of Douglas and Prescott's Qualitative Analysis appeared in 1874 and was at once recognized as standard. This book has passed through many editions and now under the authorship of Prescott and Johnson is annually used by hundreds of beginners in Analytical Chemistry. His "Outlines of Proximate Organic Analysis" was the first text on this subject in the English language and its successor is now the most complete treatise on the subject. His monograph on "The Chemical Examination of Alcoholic Liquor" was first issued in 1875 and remains a standard authority. His success as an author of text-books is due to his thoroughness of knowledge and clearness of statement.

As a toxicologist Doctor Prescott has won a high place, especially for the precision of his investigations. No one, certainly since the time of Wormley, has given more attention to the delicacy and limitations of texts for alkaloidal and other organic poisons and his contributions along these lines are to be found not only in journals but also in the more recent encyclopedic works on medical jurisprudence, as that of Haines and Peterson. As an expert witness, his testimony was always clear, scientific and free from partisan bias.

In Sanitary Chemistry Doctor Prescott has done much valuable work. The chemical examination of drinking water and the efficiency of filtration have been matters of investigation along these lines. The detection of foreign fats in butter and of coloring matters in butter substitutes have received his attention, and among his students, Geissler, Cochrane, Ewell, Crampton, Doolittle, Van Slyke and others have become leaders in their studies of foods and food adulterations. He has rendered the State of Michigan signal service in the aid he has given food commissioners in the detection of harmful adulterations and preservatives and in the enforcement of the pure food laws.

As Dean of the School of Pharmacy since its establishment in 1876, he has always worked for high ideals in the profession and his students have taken advanced positions in many states. His influence for good has been largely felt in both the state and the national pharmaceutical associations. For many years he has served either as an active or advisory member of the committee on the Revision of the "National

Pharmacopeia," and many of the methods found in this official publication owe their excellence to his investigations in the laboratory.

As a member of the medical faculty for the past forty years, and as the senior member since the death of Doctor Ford in 1894, his colleagues have looked to him for wise counsel and unprejudiced advice, and it is needless to say that they have never been disappointed. Although not in active practice since he resigned from the medical service of the army in 1865, he has always been keenly alive to the best interests of the profession, and has made valuable contributions to the local, state and national societies.

For many years Professor Prescott has published under the head of "Contributions from the Chemical Laboratory of the University of Michigan" the research work done by students under his direction. Like other great teachers of science he has been most liberal in the help rendered to his students. He always took great pleasure in inciting his students to undertake research. In his quiet way which his old students know so well and love so dearly he has supplied them with ideas, directed them in the prosecution of the work and then published the results under the student's name. The worth of such a clear-headed, big-hearted instructor to the students who are fortunate enough to come under his influence is greater than gold, and it is no wonder that the chemical laboratory of this University became the birthplace of such chemists as Wrampelmeier, of London, Young, of Northwestern, Dennis, of Cornell, Senier, of Ireland, Hesse, of Germany, the late Henry Parsons, of New York, and our own Gomberg whose epoch-making researches on the valence of carbon has brought to the University great honor from the leading chemists of the world.

Doctor Prescott's papers reporting research in analytical, pharmaceutical, and organic chemistry with those credited to his students and done under his supervision number probably about two hundred, and among these are many of great value, while all are real contributions to science.

His contributions have appeared originally for the most part in American and English journals, and many of them have been translated and have appeared either in full or in abstract in German and French publications. His first paper, so far as the writer knows, appeared in the *Engineering and Mining Journal* for December, 1869. It dealt with the subject of "Blow Pipe Analysis," and covered the methods for the dry assay of gold, silver, lead and copper. In this, his first paper, Doctor Prescott has written tersely and clearly. His directions are sufficiently minute for the intelligent student to follow and yet wholly free from unnecessary duplication of words. His style is clear without prolixity and terse without obscurity.

In the following year (1870) he contributed to the *Chemical News* of London, a description of an apparatus devised by him for rapid vaporization with limited heat. This article was widely abstracted by chemical journals in other languages and was the first step in the development of his international reputation as a research student. Subsequent contributions of value followed along like lines and met with the same extended notice.

The work done by Murrill under Doctor Prescott's direction for the committee on the Revision of the Pharmacopeia in 1898 involved laborious research in the literature of the subject and much patient work in the laboratory. This paper was published by the Committee on Revision in a pamphlet of fifty-eight pages. The chemical bibliography of morphin prepared by Brown under Doctor Prescott's supervision embraces two hundred and sixty-three titles with a condensed abstract of each, collected from English, French, German, Italian and Russian literature, and for the time covered—1875 to 1896—is the most complete bibliography on this subject to be found in any language. The research on "The Caffein Compound in Kola" carried out with Knox under the Stearns Fellowship adds much to our knowledge of plant chemistry in general and of the caffein compounds in particular.

Probably the *opus magnum* of Doctor Prescott in his research investigation is his work on the "Alkaloidal Iodides." This research extended through several years and in it Doctor Prescott had the assistance of several students, notably of Gordin. As early as 1839 Bouchardat proposed that a solution of iodine in potassium iodide be used as an alkaloidal precipitant. This proved to be an exceedingly delicate test giving visible precipitates with some of the more important medicinal alkaloids in dilutions of one part to fifty thousand to one hundred thousand parts of water. In 1861 Wagner recommended a decinormal solution of iodine in potassium iodide for volumetric determination of the alkaloids. The great Danish chemist, Jörgensen, later in the sixties used the alkaloidal periodides in the study of structure, but it remained for Prescott and his students to study the formulæ of many of the periodides and to make the volumetric examination of the alkaloids with this reagent a practical success.

We are aware of the fact that this presentation of the scientific work of our late teacher and colleague is unsatisfactory. To have given the bare titles of his papers would have taken more space than we have at our disposal, but we have endeavored to give some general idea of the valuable work he has done. In prsenting this summary we have knowingly exaggerated nothing, because he would not have wished it so. Twenty years ago Doctor Prescott read a tribute to one of his best beloved students, Henry B. Parsons, and in this may be found the following: "Our words, poor at best, must suit the true scientific spirit of our departed friend. For him no tribute of speech can be more proper than a simple and just recital of the services he has rendered during the period granted him for the labors of life." These his own words fitly describe him whose death we today mourn. He needs no eulogy. The forty years spent as a teacher and investigator in this University have been for him full of labor and love for his labor. Probably we have never until today realized how much he has accomplished. He is dead, but his labor has not been lost. In writing of a departed colleague some years ago Doctor Prescott said: "A work that is wrought out in the endeavors of science acquires a certain momentum. When the worker is taken away from his place among men the work does not pause, being carried on by the power of previous impulse. In any realm of thought the force imparted by an earnest man is often seen more plainly and estimated more fairly after death has taken him away. So separate and secluded are the channels of men's labor, under the prevailing tendency to division of effort, that people do not become aware of the toil of their contemporaries until some occasion calls for the writing of a record." Again, how aptly his words apply to himself. We have never appreciated him so highly as we do today. In our daily companionship with him we were always aware of his goodness and quite forgot his greatness, but both his goodness and his greatness are rich inheritances that he has left to us and others.

Doctor Prescott was one of the most modest of men and we would not speak one word of fulsome praise concerning him, but we believe that we have full warrant for saying that his life and character approached the ideals of human perfection so nearly as to be conspicuous and rare. If we were to single out a single trait of his character that always impressed itself upon his friends, we should mention the remarkable combination in him of gentleness and strength, in which gentleness held the balance of power. Not a harsh word, nor an unkind judgment was ever heard to fall from his lips and yet there was strength of will and firmness of purpose that could be as unyielding as adamant. That judicious temper, that characterized all his words and deeds, was frequently displayed in the many deliberative bodies, both in and outside of the University, in which some of us know him. How well considered were his counsels, how unerring and true was his judgment, slowly reached, but clearly stated and firmly held. Doctor Prescott was most methodical in all his work and this enabled him to accomplish much in a quiet way. He held responsible positions in many public, charitable and religious organizations, and in all he was prompt and efficient.

He was a deeply religious man, and all that he did was for the good of his fellow and to the glory of his Creator. He believed in the religion of science and he regarded a chemical discovery as a revelation of the wondrous works of God. These phases of his faith and his work will be best illustrated by the following quotation from an address given by him, as presiding officer, to a learned society:

"The pride of pure science is justified in this, that its truth is for the nurture of man; and the ambition of industrial art is honored in this, its skill gives strength to man. It is the obligation of science to bring the resources of the earth, its vegetation and its animal life, into the full service of man, making the knowledge of creation a rich portion of his inheritance, in mind and estate, in reason and in conduct, for life present and to come. To know creation is to be taught of God."

In another address he said:

"The task of the chemist is rich with many meanings at every step of the way. It is most rich when the hand of God is recognized in all the fashionings of nature, and his truth is seen to be the strength of the sands under our feet."

This man of science approached the solution of his chemical problems with reverence and saw in the structure of a molecule a manifestation of the wonderful wisdom of the Creator. In studying the mechanism of matter he never forgot the Master Mechanic and in admiring the picture he never forgot the skill of the painter.

Our friend was a man of wide sympathy and far-reaching interests. "*Nil humani a me alienum puto*" might truly have been said by him.

The University has lost one of its most eminent men and one of its best teachers, and we, the members of this Senate, have lost an honored and beloved companion. We extend to his sorrowing family our deepest sympathy, and spread on our records this tribute to the memory of our beloved colleague, whose charm of manner and unfailing courtesy have so greatly endeared him to us all.

CRIME AND CRIMINALS, AND WHAT SHALL BE DONE WITH THE LATTER?*

By HENRY HATCH, M. D., Quincy, Illinois.

On a former occasion and before another body I read a paper upon the subject, "How to Prevent the Manufacture of Degenerates," but you, gentlemen, are here to learn the best methods of dealing with a class of degenerates after they have been manufactured. To my mind there are two classes of degenerates: one by inheritance, and another by acquisition. The latter class is a product of degenerates, produced by environment, just as a good, young tree planted in bad soil and neglected will grow crooked and imperfect. Some beings with bad heritage can be improved, and by proper environment and proper surroundings be made better, but no matter what the surroundings and how good the cultivation, others will grow bad, the same as some trees, no matter what care may be given them, will grow imperfect trees.

The question then arises, "Are persons poorly born absolutely responsible, and if they do an overt act should they be held as criminals and be punished as such?" There is no doubt that they should be restricted and put under control, but you, gentlemen, who have the care of so many of these miserable beings undoubtedly know of more than one instance where the individual should be rated as an insane person rather than as a criminal, for, to draw the exact line between what is a criminal act and what is an insane act, is as difficult as to draw the line between a sane and an insane person. Ferri, the great Italian jurist, and one of our best authorities, has said that every man and woman, no matter how pure, have transitory thoughts to do bad acts, but having other brain cells that act for good, are able to overcome the evil thoughts to commit wrong. We are in this world not by our own volition. We have a physical organization not to our ordering, for where is there a human being who, unless totally depraved, would not have ordered his forming right and perfect, with every cell in its proper proportion and position? Undoubtedly many a poor victim now in charge of this association was born with crooked, misplaced, or deformed brain cells, just as every day children are born with gross physical defects that are visible to anyone. If beings are born with one arm or with one leg, we do not think of punishing them because they cannot work, but we take care of them, unless they are so improperly formed as to be a deformity and sufferer, when we should destroy life. The poor fellow who comes from diseased parents certainly should not be regarded, treated and handled in the same way as the one of good heritage. It has been noted by a number of writers, and more recently demonstrated by Professor Gay A. Tawney, of Beloit College, that the general tendency of humanity is to retrogression instead of progression, unless surrounded by proper environment. Professor Tawney took the position for two months at the Saint Louis Fair of pushing a chair for the sake of studying people, and he says that with the useful elevating things people wanted little to do, but with the frivolous—as on the Pike—they became deeply interested. Since reading the above, I have visited the fair and noticed the same myself, in a measure proving the assertion of some well-known writer, that without proper environment or mental direction, man reverts or tends backward instead of forward. It has often been a question in my mind whether many persons do exactly right because of the justice of doing right, or on account of the pleasure of doing right, for right's sake, or whether they do right for the sake of some ulterior policy or motive. With our present habits and training, I think only a very few do right for right's sake.

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*Read before the National Prison Association.

It is an unfortunate condition of society that millions of dollars are every year expended to protect society against the defective class, while a comparatively small amount is spent to prevent the making of them. That our present laws and methods are defective is conclusively shown in the increase of all kinds of crime. It is estimated, and most probably under the true figures, that each state has spent an average of two millions per year for the cure of the degenerate class. Of course, this means all classes in the union, a sum perfectly appalling. Besides this, there are according to the United States census of 1890, and no doubt the number has been materially increased since that time, over seventy-three thousand abject paupers, than which for proper soil in which to breed criminals none can be found better. I would force these dependents to work at reducing swamp lands, of which there are three millions of acres in this country. Quite recently in this state of

Illinois, at the city of Peoria, there has been erected an asylum for incurables. This should not have been done, for it is an unkindness toward the very class it is designed to befriend, and I believe the time will come when the state will be allowed to quietly terminate the existence of these poor unfortunates. During my life I have had many practical illustrations of the incurable who were suffering severely and who begged that I would terminate their existence. I believe in the eyes of God and man that I would have been justified in quietly fulfilling their desire. We produce anesthesia in the lower animals to terminate their sufferings. Why should we not be equally kind to human beings? I believe it should be the right of every person who is an intense sufferer to die if he so wishes. Many of these incurables are dead to the world and themselves for many years before death relieves them of their miserable existence.

Now the question arises, "What shall be done to prevent all this crime and misery?" In the first place, are our laws framed on a proper basis? What are, and should be, their object? Should it not be the object of the law to make humanity better, and to lessen suffering and crime? You will all say "Yes." Then, gentlemen, when you return to your homes, influence your legislatures to pass such laws as will prevent the making of degenerates. Many states have passed laws to prevent consanguineous marriage and the edicts are constitutional. Then, go a few steps farther and say, that criminals and degenerates shall not marry and bring forth their kind; that only the strong and healthy shall make the population; that if the defective are already married they shall be unsexed. When it is remembered how much certain families have cost the state in prosecutions, as the Max family, for instance, which cost over one million dollars, the importance of stopping the sin at the fountain head is emphasized. Another source of the contamination of the human race are the numerous houses of female debauchery that infest every city of considerable size. A few years ago I corresponded with the chief of police of every large city in the world, and the report each furnished was appalling. Prostitution not only affects the immediate participants, but its effects are far-reaching in the lower moral tone and in the spread of disease. Many of the places are the haunts of the defective class for concocting schemes to further ends toward final downfall. Let us instruct our sons and daughters to be loyal to their family obligations. Teach them to be industrious that they may grow up better men and women, and make happy homes, which are the foundation of a strong government. Those who are loyal to their families always make good citizens. The idea of crime or of goodness is a matter of education. Primitive people did not know what theft meant for there was nothing to steal, and our supreme courts have often reversed their own decisions showing that what they consider right at one time may be wrong at another. Crime and goodness are all a matter of slow evolution in humanity, just as from the bitter sour apple man has developed the fine sweet apple which we eat today. Radical changes of all kinds are often bitterly opposed because people are not always educated to understand the good to be derived therefrom. The self-binder, sewing machine and cotton-gin were all opposed because the people thought they would be deprived of work, but we all know that these inventions make more work.

We will now consider the degenerates as we find them today. They are criminals or degenerates because they cannot be otherwise. They are either born defective or made defective by environment. It is next to impossibility to make a good human being from one born in poverty, degradation, and diseased parents. People under such adverse conditions, physically and mentally, are likely to exhibit low foreheads, retreating backward and upward, and thick, heavy chins. This class can be made better by proper environment if taken in time, but they are always liable to an outbreak. If they live to become confirmed criminals it would be an act of kindness to them and a protection to the state if they could be killed. The state should not deal with criminals in the spirit of vengeance, but in the spirit of mercy and protection, for if they are dealt with otherwise the actor also becomes criminal. No officer or assistant in the care of the defective class should receive appointment on account of politics or religion. The chiefs should be fitted for the work by education, which should be far above the average, and they should be persons capable of exercising perfect control over themselves, and be good judges of human nature. No two criminals or defects are identical in disposition and cannot be treated exactly alike, any more than two sick people can be treated exactly alike. Those who are to be released after a time should be taught to become better. For those who become inmates a second time we should have a law to unsex them, the second offence being sufficient reason why society should not be burdened with more of the same kind. It is my opinion that children of all parentage should at puberty pass physical examination in order that the state may know at the beginning of life whether they are fit persons to bring children into the world. If such a law were passed—and I believe the day will come when it will be—it would prevent much crime and physical misery. With as much care in the propagation of humanity as the farmer exercises in the selection of his cattle and hogs much misery would be prevented, and criminals and all others of the defective class would become scarce.

In conclusion, laws should be made and enforced upon the principle of justice and protection, not vengeance. I would recommend such laws to control those sins that cannot be absolutely prevented. Such should be put under strict medical and police control, and one of the most important of these is the control of prostitution. There should be, also, some law devised to prevent young girls from roaming about the streets after nightfall. A heavy penalty should be imposed against saloonkeepers who knowingly sell intoxicating liquor to those whom they have any reason to believe are in the habit of becoming intoxicated. After a person becomes a confirmed degenerate, evidence of which will be a second conviction, the verdict should carry an order with it that he be unsexed. All degenerates, no matter of what degree, should be kept at some kind of employment, not only for their own good, but to lessen the burden that they are to the state. Prison authorities and all others in charge of the defective class should study degenerates under their care individually as well as collectively, and endeavor to impress upon them the fact that an upright life is better than any other. No one in this age has a right to bring children into the world unless they can give them a good name and a good constitution, and you, gentlemen, who are the custodians of the defective class, should return to your homes with firm resolution to use your influence to carry out the ideas I have advanced.

TRANSACTIONS.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

STATED MEETING, FEBRUARY 6, 1905.

THE PRESIDENT, DANIEL S. DOUGHERTY, M. D., IN THE CHAIR.
REPORTED BY JOSEPH A. ROBERTSON, M. D., SECRETARY.

READING OF PAPERS.

TREATMENT OF FRACTURE OF THE PATELLA.

DOCTOR WALTER C. GILDAY read a paper bearing this title. Following is an extract:

"Treatment of recent fracture of the patella should be divided into nonoperative and operative. The nonoperative, in my opinion, is not the treatment of selection, but should be resorted to when the patient will not alow an operation. When we meet such individuals, I prefer the method of Wyeth, which consists of two pieces of adhesive plaster, cut in such a shape that they cover the entire anterior surface of the thigh and leg. At one end of one piece is left a narrow strip, to which is attached an ordinary buckle; on the other one, the strip acts as a tongue that fits into the buckle. The thigh and leg having been scrubbed and shaved, the adhesive plaster is so applied that the upper and lower fragments of the fractured bone are caught respectively by the tongue and buckle. The buckle is tightened so as to draw the fragments together. They usually show a tendency to tilt upwards, which is overcome by placing a piece of cotton directly over the fracture, the counterpressure holding the fragments in apposition.

"Union is not bony, as the torn capsule will drop between the broken ends of the bone. A posterior splint is applied, and in a very few days the patient is allowed to go about with crutches, the sole of the shoe on the opposite foot being elevated. The buckle is tightened as the swelling goes down.

"The treatment is kept up, sometimes for months, and the result is not as satisfactory as after the open operation. The patient will complain that it bothers him to go down stairs, or to run, and will say that he is never 'sure of his leg.'

"The best time to operate is the third or fourth day after injury, the patient having previously been kept perfectly quiet, with a posterior splint, and an ice-bag applied continuously over the knee-joint. By this time, hemorrhage will have ceased and the swelling subsided. If, however, the swelling has not sufficiently reduced itself, it is perfectly safe and proper to wait until the seventh or eight day.

"The asepsis is all-important, for the existing contused and lacerated soft parts, in the presence of blood clots and serum, present a fertile field for sepsis. On the other hand, there are several days during which to prepare the skin. This may be accomplished by applying, during the first day, a thin green soap poultice over the entire knee-joint, under the ice-bag; the next day scrub thoroughly two or three times with a brush and green soap; then an application of one to five thousand bichloride dressing is kept on till the time of operation. Tincture of iodine is applied to the skin immediately preceding the incision. The operator should so perfect his technique that his fingers never come in contact with the field of operation.

"A few minims of a one-fourth of one per cent of cocain solution injected into the line of incision will completely anesthetize the whole field, and is preferable to general anesthesia. The cocain solution must have a neutral reaction, which is accomplished by using normal salt solution as a medium.

"I prefer the semilunar incision, with the convexity downward. The most serious objection to this incision is that the scar comes over the tubercle of the tibia, which can be obviated by bringing the incision a little above this point.

"The incision being made, intervening blood-clots are washed out with a stream of normal salt solution, the torn edges of the aponeurosis are picked up with a thumb forceps, the ragged edges trimmed off with a pair of scissors and sutured, care being taken to get perfect apposition, especially of the lateral aspects. Kangaroo tendon is the preferable suture material. The wound is dressed with an ordinary dry, aseptic dressing and a posterior splint applied. In the clinic of Professor Bodine, an individual splint is used for each case. The splint is made of plaster-of-Paris, folded in the shape of a board, and before it hardens, applied to the posterior surface of the leg and firmly bound. The skin is first coated with a thin layer of vaseline and the plaster applied directly to it, and excoriation has never resulted from this method. Plaster, after hardening, is removed, the rough edges are cut away and trimmed with adhesive plaster."

He then described in detail the after-treatment of these cases, and said that the patient was discharged at the end of the sixth week.

DISCUSSION.

Doctor **Frederick C. Keller**: From the results of the open operation which I have seen performed for fracture of the patella, I am firmly convinced that this is the method of treatment which should be used in most cases.

Doctor **James P. Tuttle**: I approve of the method of operation advocated by Doctor Gilday for the cure of fracture of the patella. A few years ago this condition was treated by some such appliance as the old Agnew splint, with a strap above and a strap below the fragments, and a screw which was tightened each day, with agony to the patient. After many weeks and even months of uselessness, the patient would be able to walk, possibly with no motion at all at the knee-joint, and often with from half an inch to an inch separation between the bony fragments. Later, holes were bored in the bones and silk sutures were introduced, but after several limbs had been amputated from the knee because of sepsis following this procedure, the old method of using apparatus was again resorted to. An important point in perfect asepsis in operation on the patella is the perfect cleanliness of the skin previous to operation. It was customary at one time to operate after using an antiseptic to wash the surgeon's hands, and with two or three sprays throwing carbolic acid directly into the wound. The patient, however, would be brought in wholly unprepared, the skin washed with soap and water, carbolic acid applied, and then the operation would be performed, almost invariably with sepsis following. Some years ago there was much talk of treating fractures of the patella by massage, but I fail to see how massage alone could enable the patient to regain the use of his limb. There is always danger of involving the knee-joint where the capsule is not torn directly across, and I would like to know what the procedure would be under such circumstances.

Doctor **John A. Bodine**: So many operators claim to be so successful with the old expectant method of treatment in fracture of the patella, that is, successful in point of joint function, that they see no reason for adopting the suture method, with its greater element of danger. However, I am quite certain that the functional result is always far from perfect with the old method. The insurance annuity in operation in Germany today discloses the fact that the average earning capacity of fractured patellas, treated by expectant methods, is about sixty-five per cent. In a recent text-book on fractures now attracting attention in the surgical world, ten months with splint bandage is given as the period of recovery in fracture of the patella by the old method, and at the expiration of that time it is never as useful a limb as its fellow on the sound side. The reasons for nonunion in the patella are (1) contracture of the quadriceps muscle; (2) intra- and extraarticular hemorrhage; (3) interposition of the torn capsule between the broken fragments; (4) tilting of the fragments, so that the fractured surfaces do not appose. The rational treatment should then overcome all of these. This can only be accomplished by open operation. Doctor Gilday wisely said that the operation should not be undertaken before the third day, and I believe that if there is much swelling or effusion into the joint, a period of even from five to ten days may elapse before operation, and this time advantageously employed with massage. Massage is all-important in doing away with the spasm of the quadriceps and aiding nutrition of the muscle, and causing absorption of the extravasated blood. Some German surgeons are today advocating the treatment of these fractures by massage alone, without any effort directed to the position of the bony fragments. It seems to me, however, that this method is illogical and unwise and certain to be followed by a poor functional result, if the tear into the capsule extends laterally into that portion of the fascia lata which we call the extensor reservatus. The value of massage in the modern treatment of fractures in the region of any joint is acknowledged to be all-important. During the interim between the accident and the day of operation, the time may be advantageously employed in thoroughly sterilizing the skin, and another important result of this deliberate waiting is that the bleeding from the broken fragments has had time to cease, and the blood to firmly clot, so that this clot can be turned out with salt solution all in one piece. I have operated on fifteen cases by the open method, with a perfect functional result in every instance. All of my cases were operated on under local anesthesia, one-fourth of one per cent of cocain, the entire operation being completed in fifteen minutes without a single twinge of pain to the patient. The posterior splint which I use is made with plaster-of-Paris, as illustrated by the essayist, except that it was applied directly to the skin surface, without the interposition of padding, the surface having first been smeared with vaseline.

Doctor William H. Luckett: I approve of the splint used by Doctor Bodine, except that he put one thin layer of gauze between the skin surface and the plaster.

Doctor J. Hilton Waterman: The method recommended by Doctor Bodine for applying plaster-of-Paris to the patella has been used in the Hospital for Ruptured and Crippled for many years, with very gratifying results.

Doctor W. B. Thompson: I think the joint is apt to stiffen when the plaster sets, and I also think excoriation apt to follow application of the plaster directly to the skin surface.

REPORTS OF CASES.

CHRONIC ABSCESS OF THE LACHRYMAL SAC.

Doctor Earl Conner: I wish to exhibit two patients with chronic abscess of the lachrymal sac. The first patient has been treated by probing, which is the classical procedure usually followed in these cases. My experience has been that this mode of treatment affords temporary relief, but the attacks of inflammation usually recur, and the patients return for treatment from time to time, and I do not think that a real cure could be obtained by this means. The patient had absolutely refused operation, and his condition at the present time presents the highest type of relief that can be obtained without the use of the knife. The second patient gives a history of suppuration for four years. Two years ago he was operated on at another hospital, and the eye was dressed for eight months, gauze being packed into the wound, cauteries applied, and several forms of treatment tried, all of which failed to produce a satisfactory result. He was admitted to the Polyclinic Hospital and was operated on, the dome of the sac being dissected out, and a much longer incision was made than at the time of the first operation. The first operation was a failure because the incision was too short, but the second one was successful, and the patient was discharged the third day after this procedure, and his condition at the present time is very satisfactory.

DISCUSSION.

Doctor Daniel S. Dougherty: Often a frontal sinus, with a sinus running down to the lachrymal sac might be mistaken for abscess of this sac. I think the latter condition sometimes dependent upon a nasal deformity, and relief of this deformity would have a curative effect upon the disturbance in the lachrymal sac. I think, too, that slitting up the sac and washing it with an antiseptic would produce very good results.

Doctor John A. Bodine: In my opinion it would be a very simple matter to cure the disease by dissecting out the sac from below, but I would like to know what the result of closing up the outlet for tears would be.

Doctor Earl Conner: Hemorrhage would follow such a procedure, then blood-clot would fill the cavity and organize; the clot might break down; granulation tissue would form, and gradually the obliteration of the sac would follow. The patient presented still has a watery eye; and by use of astringent collyria, the epiphora will be overcome; or, if it is not, removal of the lachrymal sac will relieve it.. The object in showing the patient is to demonstrate that so long as the abscess exists, so long is the eye in danger. A simple abrasion, for instance, might produce a sloughing of the cornea, and then the eye may be lost. I think operation justifiable to preserve the health of the eye.

SADDLE-BACK DEFORMITY OF THE NOSE.

Doctor George B. McAuliffe: I desire to show this patient. In the operation, the nasal bones were fractured at the sides and the septum separated from the line of the bone, and the osseous deformity was broken up by forceps. There was left a projection which, by a slight external operation, was cut down on and removed. On three subsequent occasions, paraffine was injected along the line of the bridge, and the result was very satisfactory. If the paraffine is in a worm-like condition, and the syringe is properly used, with a graduated screw, one can regulate the amount injected into the tissues. There is no reason why the use of this agent should not result satisfactorily, and there should be no danger of it spreading.

DISCUSSION.

Doctor John A. Bodine: This work is interesting because it is one of the best results from paraffine injection that I have seen. A few years ago paraffine was being used generally, and many failures resulted from the improper handling of this agent. There is one case on record where it was injected into the nose, and immediately the patient complained that she could not see out of her right eye, and she has never since had the use of her sight in that eye, probably because the paraffine entered the ophthalmic vein. I remember a patient at Saint John's Hospital who had a fistula, followed by sloughing of the rectum. There was an immense amount of scar tissue, and the patient had absolutely no control of his bowels. The tissue surrounding the anus had sloughed to such an extent that there was no structure to work on for a plastic operation, so I injected paraffine from the midline in front to the midline in back on one side of the rectum, and sufficient was injected to produce a distinct resistance when I pushed my finger into the bowel. The patient's bowels now move but once or twice a day, and he experiences but little trouble, although, no doubt, in case of a diarrhea he would be unable to control them. Another patient upon whom I used paraffine is a woman who, at the birth of a child, was torn through the perineum into the bowel, and the front wall of the vagina so lacterated as to cause urinary incontinence. After restoration of the perineum and the sphincter of the bowel, an anterior colporrhaphy was performed, and after this a ridge of paraffine was put along the lower surface of the urethra, from the neck of the bladder to the orifice. The patinet can now hold her urine for six hours.

Doctor Earl Conner: Injection of paraffine into the lachrymal sac makes its dissection a very simple operation, and insures the operator of removing the entire sac.

Doctor Daniel S. Dougherty: A few years ago paraffine was very generally used, with some very lamentable results, and I agree with Doctor McAuliffe that this was partially due to the fact that paraffine was used in a liquid form, and very hot, and not, as Doctor Harmon Smith first advocated, in a semiliquid or worm-like condition.

Doctor George B. McAuliffe: Doctor Jonathan Wright, at the New York Academy of Medicine, exhibited some time sections which showed that after it had become encapsulated in the connective tissue, the tissue gradually absorbed the paraffine by the growth of connective tissue into it, and this absorption went on until finally there was very little paraffine and a great deal of connective tissue.

Doctor William H. Luckett: I cannot let a statement that the "paraffine was displaced by connective tissue" or that "fibres grew down into or through the paraffine" go undisputed. I read a paper before this very society over a year ago on this very subject, at which time I showed some microscopical sections displaying connective tissue apparently running through paraffine. The tissues, however, from which the sections were made, had been taken from the site of a paraffine injection on the cadaver; therefore, the fibres could not have grown into the paraffine, but the paraffine was injected around the connective tissue fibres, filling up the areolar spaces, and really looking under the microscope as if the connective tissue had dipped down into the paraffine. This, however, only proved that the paraffine could be injected around the bundles of connective tissue fibres, and does not prove that the connective tissue cannot or does not grow into the paraffine. To prove the latter hypothesis, which I assume, I deposited several pieces of solid paraffine through incised wounds into the loose areolar tissue on the back of a cat, closing the wounds by suture. There was primary union. These pieces were removed, one at a time, at the end of one, two, three and four months, and subjected to careful investigation. In no instance was a single connective tissue cell found growing into these solid pieces of paraffine—a capsule of connective tissue only was found surrounding them.

ANGIOMA OF THE TONGUE AND OTITIS MEDIA.

DOCTOR DANIEL S. DOUGHERTY: I wish to show a case of angioma of the tongue. The patient first came to me complaining of a pain in her ear, and examination revealed a chronic suppurative otitis media, and a few days after her first appearance she developed an acute condition, for which I did a Schwartze-Stacke, doing the radical mastoid operation, removing the posterior wall, and making what is termed a Panzer flap to close the opening between the cavity of the middle ear and the adjoining portion of the antrum. The result was remarkably good, which is not always the case in operations of this character. Angioma of the tongue is a condition which usually exists from birth, as is probably the case in the present instance, although it could be produced by irritation. The mucous membrane can have a papillomatous mass, by irritation of which the blood-vessels become infected, and it becomes angiomatous and often spreads very rapidly, as in the present instance, where the growth was about the size of a pea when first seen, about six weeks ago, and which at present involves a large portion of the right border of the tongue. Cure can be accomplished in any one of the three ways: by tying off, by use of electrical wheels, or, as Doctor Bodine treats such cases, by slitting the tongue, removing the growth, and sewing the tongue together again. The latter procedure will be resorted to in the case under discussion.

DISCUSSION.

DOCTOR JOHN A. BODINE: I would operate on this child's tongue without giving her a general anesthetic, but would use one-third per cent cocain solution, locally. The angioma is on the side of the tongue, and a triangular piece about an inch in size can be removed from the tongue with a pair of scissors, and the previously inserted sutures immediately tied. The entire operation would consume about five minutes.

Doctor Frederick S. Lovell: I would like to know what effect upon the speech the removal of an inch of tongue and drawing the fragments together would produce.

Doctor William H. Luckett: The tongue, by muscular accommodation, as it were, would have a tendency to straighten itself out, and the speech would not be at all affected by the operation.

RESULT OF OPERATION FOR SARCOMA OF ANTRUM.

Doctor John A. Bodine: I desire to show a patient on whom I operated a year ago for sarcoma of the antrum. The antrum was filled, and bulging into the mouth, and a very radical operation was performed. The operation was nearly bloodless, by reason of a temporary tourniquet under a small rubber band thrown around the external carotid. This is the forty-second operation performed by me for removal of either upper or lower jaw, and with only one death (a patient upon whom I operated under protest). At the end of a year there is no sign of recurrence, and there is no voice disturbance. The soft palate was left in, and after one or two dentists had refused the attempt to make a plate for him, Doctor Gunn experimented with it and succeeded. The patient now has satisfactory use of his voice. When the plate is removed, however, he is hardly able to speak at all.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL SOCIETY.

MIDDLE SECTION.

STATED MEETING, TOLEDO, OHIO, FEBRUARY 24, 1905.

The Chairman, THOMAS HUBBARD, M. D. (of Toledo), Presiding.
Reported by WILLIS S. ANDERSON, M. D. (of Detroit), Secretary.

READING OF PAPERS.

Doctor John M. Ingersoll, of Cleveland, read a unique paper on "The Nose and the Accessory Sinuses of the American Bear." He presented some very carefully prepared specimens which showed the wonderful development of the turbinal structures in the bear, and the extent of distribution of the olfactory nerve. The anatomy of the parts was carefully considered and comparisons drawn between the bear and the human nose.

Doctor R. Bishop Canfield, of Ann Arbor, read a paper entitled "Three Cases of Trifacial Neuralgia due to Intranasal Causes and Treated Successfully by Intranasal Methods." These cases illustrated the inportance of the nose as an etiologic factor in trifacial neuralgia, and showed the necessity of a careful rhinologic examination in every case of trifacial neuralgia.

Doctor James J. LaSalle, of Toledo, under the title of "Diseases of the Accessory Sinuses," reviewed the symptoms, diagnosis and treatment of diseases of the various sinuses.

DOCTOR WILLIS S. ANDERSON, of Detroit, presented a paper entitled "The Passing of the Galvano-Cautery in the Treatment of Diseases of the Nose."

The importance of the accessory sinuses were not lost sight of by the members. Four excellent papers were presented on different phases of the sinus problem.

Other papers were presented on otological subjects.

Many interesting specimens and instruments were presented. Doctor Jackson's modification of bronchoscopic tubes was shown by the originator, and their use explained. The advantage of the Jackson tubes is, that he has placed a small electric light at the distal end of each tube, which gives better illumination than the Killian electric light fastened to the head. A set of bar magnets for the removal of metalic bodies from the air-passages was also presented. Doctor Preston M. Hickey, of Detroit, presented a number of skiagraphs of frontal sinuses. Doctor Thomas Hubbard, of Toledo, presented a superb dissection showing the anatomy of all the sinuses and the mastoid region. Doctor Francis W. Alter, of Toledo, presented two patients upon whom he had successfully done a submucous resection of the nasal septum. The results were excellent. Later he read a paper upon the subject describing more especially the Killian operation. His paper and the discussion which followed showed that the resection operation was gaining popularity in this country as the best operation for the correction of septal deflections.

ORIGINAL ABSTRACTS.

SURGERY.

BY FRANK BANGHART WALKER, PH. B., M. D., DETROIT, MICHIGAN.
PROFESSOR OF SURGERY AND OPERATIVE SURGERY IN THE DETROIT POSTGRADUATE SCHOOL OF MEDICINE; DEMONSTRATOR OF OPERATIVE SURGERY IN THE DETROIT COLLEGE OF MEDICINE.
AND
CYRENUS GARRITT DARLING, M. D., ANN ARBOR, MICHIGAN.
CLINICAL PROFESSOR OF SURGERY IN THE UNIVERSITY OF MICHIGAN.

ACID INTOXICATION: ITS SIGNIFICANCE IN SURGERY.

JAMES A. KELLY, of New York City (*Annals of Surgery*, February, 1905). The writer does not claim that the name fully describes the condition but may include a number of cases described by others under the titles acetonuria, acetonemia, and aciduria. Four hundred cases were under observation and forty-six of these had acid intoxication.

The first symptom to attract attention was a peculiar apathy, a sweetish odor to the breath, a distaste for food, slight increase of body temperature, and in most cases vomiting. The odor was peculiar, that of acetone, and at times suggested chloroform. So characteristic was this symptom that when present, however faint, examination of the urine would show the presence of acetone and diacetic acid. Vomiting occurred without apparent cause whenever anything was taken into the stomach; in severe cases dark, bile-stained fluid of a "coffee-ground" appearance, which continued until death. In severe cases the temperature would reach 102° to 103°. Restlessness would alternate with apathy so that the patient needed constant attention. In the fatal cases consciousness usually remained until near the end to be followed by stupor or delirium. The pulse at first rapid soon became weak, gradually failing and just before breathing ceased became imperceptible.

The urine in fatal cases was diminished and of high specific gravity, in some instances containing traces of albumin. The urine of mild cases always contained acetone and diacetic acid separately or combined. This would suddenly disappear with the symptoms. An excess of acetone and diacetic acid has been found in diabetes mellitus, in starvation, malignant growths, digestive disturbances, in septic processes general or local, in infectious fevers, in pregnancy associated with a dead fetus, in certain psychoses, in autointoxications, in chronic morphinism, in phosphorus poisoning, following general anesthesia, in injuries to the cerebrospinal system, in shock due to injury, in cases associated with fatty liver and probably in cases of uremia.

Just what relation these substances found in the urine may have to the symptoms mentioned the writer does not state but hints that the toxemia may be due to the presence of volatile fatty acids, to the rapid destruction of proteid matter, or to the rapid elimination of the alkalies.

Very little has yet been learned about the treatment of these cases. Mouth-feeding is prohibited when there is vomiting and rectal feeding is employed when the condition lasts several days. Severe cases were given bicarbonate of soda by mouth, enemata, subcutaneously and intravenously with but temporary relief. The best results were obtained from adrenalin chloride given subcutaneously every eight to twelve hours. The result was to increase the tension and slow the pulse. Enemata of salt solution were given every six hours to relieve thirst.

C. G. D.

GYNECOLOGY.

By REUBEN PETERSON, A. B., M. D., Ann Arbor, Michigan.
PROFESSOR OF GYNECOLOGY AND OBSTETRICS IN THE UNIVERSITY OF MICHIGAN.
AND
CHARLES LANPHIER PATTON, M. D., Ann Arbor, Michigan.
DEMONSTRATOR OF GYNECOLOGY AND OBSTETRICS IN THE UNIVERSITY OF MICHIGAN.

THE TREATMENT OF CANCER OF THE CERVIX UTERI IN ADVANCED STAGES.

J. Wesley Bovée, of Washington, District of Columbia (*American Medicine*, January 7, 1905): Fully eighty per cent of this disease, when seen by gynecologists, has passed to such advancement as to be readily recognized as incurable. The prognosis in such cases depends upon the following factors: Age of patient, family history, apparent duration of disease, variety of disease, amount of excavation already resulting from the disease, amount of infiltration of adjacent parts, involvement of distant parts, and the presence of other physical disabilities that preclude radical surgical operation.

The disease has proved to have a much more rapid progress in young women than in those far advanced in years. It seems to be more tenacious to those in whose families it has previously manifested its presence. The progress of this disease of the cervix is sometimes quite slow, while extension into the lymphatics is rapid. The pavement epithelial form of cancer of the cervix is more amenable to radical treatment than is cervical adenocarcinoma. The size of the crater is usually in direct proportion to the progress of the disease, but infiltration of the surrounding structures is the chief guide. The disease may extend to the liver, kidney, lung, spleen, or heart. Severe lesions of the heart, kidneys, lungs, et cetera, negative radical surgery.

Doctor Boveé has arrived at the following conclusions:

(1) Severe surgical operations, involving appreciable mortality rates, or a marked degree of additional suffering should not be employed in the treatment of carcinoma of the cervix uteri, except in very early cases.

(2) According to reports of the exhaustive microscopic examinations in serial sections of the tissue surrounding the uterus in cancer of the cervix, we have no means of knowing before operation, that eradication is certain in any given case of this disease, and hence such attempts must be reserved for the very earliest and most promising cases.

(3) The galvanocautery offers the best prospects for prolonging life, relieving pain and lessening discharges in all other cases. C. L. P.

OBSTETRICS.

BY WILLIAM HORACE MORLEY, PH. B., M. D., ANN ARBOR, MICHIGAN.
ASSISTANT IN OBSTETRICS AND GYNECOLOGY IN THE UNIVERSITY OF MICHIGAN; VOLUNTEER ASSISTANT TO VON WINKEL'S OBSTETRIC AND GYNECOLOGIC CLINIC IN MUNICH.
AND
CHRISTOPHER GREGG PARNALL, A. B., M. D., ANN ARBOR, MICHIGAN.
ASSISTANT IN OBSTETRICS AND GYNECOLOGY IN THE UNIVERSITY OF MICHIGAN.

RUPTURE OF A CHORIO-EPITHELIOMA, WITH SEVERE INTRAPERITONEAL HEMORRHAGE.

HÖRMAN (*Bieträge f. Geb. u. Gyn.*, Band VIII, Heft 3), in an interesting article, reports a case of this kind that occurred in the Münchner frauenklinik. The clinical picture of the case and the macroscopical findings on the extirpated uterus exhibited so marked a deviation from the usual type of the disease that the diagnosis of chorio-epithelioma was at first not made. The principal clinical symptom of continuous irregular hemorrhage was completely lacking.

Patient had had eighteen months previous to her entrance a hydatid mole with a blood discharge of some weeks' persistence, which was followed by her regular but somewhat more severe menses. A year later or six months before entrance patient developed a sudden and severe hemorrhage. During three and one-half months previous to her entrance in the klinik she did not have her regular menstruation.

The findings by examination before and at the time of operation, as well as from the macroscopical examination of the extirpated organs led Hörman to make a diagnosis of extrauterine pregnancy. The tumor consisted of an outgrowth of the right uterine horn with an orange-sized, brown-red, fluctuating tumor, whose walls and contents were hemorrhagic in appearance, which hemorrhage no doubt resulted from a rupture of a part of the tumor.

The microscopical examination established the diagnosis of chorio-epithelioma. The uterus was removed by supravaginal amputation. Patient died three and one-half months later apparently from intestinal metastasis, as the uterus was firmly adherent. Unfortunately no post-mortem was performed. MORLEY (MUNCHEN).

VAGINAL CESAREAN SECTION.

CARSTENS (*American Journal of Obstetrics* for November, 1904) concludes his article on "Vaginal Cesarean Section in Grave Cases of Puerperal Eclampsia," by saying:

(1) In grave puerperal eclampsia, as a rule, prompt delivery will save the patient.

(2) That manual effort with the fingers and the hand is too slow.

(3) Powerful steel dilators are not always at hand, and often cause serious injuries.

(4) Vaginal Cesarean section enables the obstetrician to quickly and safely deliver the woman. H. S. M'G.

PEDIATRICS.

BY ARTHUR DAVID HOLMES, M. D., C. M., DETROIT, MICHIGAN.

ON THE ABUSE OF MILK IN THE CHRONIC GASTRO-INTESTINAL DISORDERS OF CHILDREN AFTER WEANING.

BILLOU (*Gazette des Hopitaux,* page 129, 1904) says that he thinks a strict milk diet often does more harm than good in these cases. The milk coagulates in the stomach and finally reaches the colon imperfectly digested, setting up acute colitis and this more common among the well-cared for children than in the poor. Bipart (*Jour de Paris,* 1903) says these patients present three clinical types which may merge into each other.

In the first the child suffers from chronic gastroenteritis with constipation. The stools are hard, scybalous and covered with mucus, evacuation is extremely painful and there is a tendency to the production of prolapse of the rectum, hemorrhoids and fissure; there may be spurious diarrhea, child is anemic, wasted, complexion earthy, abdomen soft, the stomach distended with gas, the liver is large, the urine contains indican and quite often albumin. The red corpuscles are diminished.

The second type begins as an acute enteritis with diarrhea, green stools containing particles of undigested milk. If neglected or if treated by milk diet this form becomes chronic, with mucus in stools, abdomen distended and tender and is soon followed by constipation.

The third type presents the picture of acute gastroenteritis. If milk diet is given, vomiting continues and frequently convulsions occur.

Treatment: In the acute stage give only water for twenty-four hours, then farinaceous soups and later soups made with fresh meats. In the chronic state check the diarrhea and endeavor to prevent intestinal decomposition. If the child has just been weaned let it return to the breast; otherwise give soups made with boiled or sterilized milk. Feed child only four times in twenty-four hours and attend to the general hygenic measures.

ORTHOPEDICS

By IRA DEAN LOREE, M.D., Ann Arbor, Michigan.
FIRST ASSISTANT IN SURGERY IN THE UNIVERSITY OF MICHIGAN.

ULTIMATE RESULTS OF THE BLOODLESS REPOSITION OF CONGENITAL DISLOCATION OF THE HIP.

Professor Doctor A. Hoffa, Berlin (*American Journal of Orthopedic Surgery,* January, 1905), reports his results with bloodless reposition of congenital hip dislocations. After a summary of the general principles, which he follows, in this field of work, he gives statistics and the results obtained with four hundred cases. Out of this number, three hundred fifteen cases had been discharged from treatment for at least one year, but all had been re-examined within one month. Of these three hundred fifteen cases, two hundred fifty were unilateral and sixty-five bilateral dislocations. Of the two hundred fifty cases of unilateral dislocations, entire restoration of the joint, with its functions was obtained in seventy-five cases. In one hundred sixty cases only a transposition of the head of the femur by the bloodless method was obtained. Out of this group of one hundred sixty cases of anterior transpositions, one hundred ten showed an improvement over their previous condition, while in fifty cases of anterior transposition the results were not satisfactory. In fifteen of the unilateral series there was complete reluxation of the head in its old position. He regards anterior transposition as a satisfactory result since the position of the head makes little difference so long as the patient gets a better use of the limb. These one hundred ten satisfactory cases of anterior transposition with the twenty-five cases of complete restorations makes a total of one hundred eighty-five or seventy-five per cent of satisfactory results.

In the bilateral series his results were less satisfactory. Sixty-five cases were operated on with both sides reduced at the same time. Of these five showed good anatomic and functional results. He secured anterior transposition of the head in thirty-two, which while not cured showed much improvement. In ten cases the head was replaced on one side, while on the other it was either in anterior transposition or a complete reluxation. In eighteen cases reluxation occurred on both sides.

He regards the limitation of the bloodless operation not dependent upon age alone, but upon the amount of displacement upward, shortening of the tissues and rigidity of the joint. Upon this basis he places the age limits, for unilateral cases, from eight to ten years, and for bilateral cases, from six to eight years. Real reposition in patients older than this is impossible because of anatomic and pathologic causes. There is so great a change in the head and acetabulum that the latter will not grasp the former from all sides.

Below the age limit the reposition can be easily accomplished in young children with loose joints, but in those cases showing much shortening and rigidity, the result must be brought about more gradually. If the head cannot be placed in the acetabulum at the first trial it should be held in the obtained position and a second or third trial made subsequently. Many times it is replaced very readily the second time. He deprecates the fact that in the past too much force has been expended in the first trial, resulting in rupture of the vulva, tearing of the perineum, fracture of the neck or shaft of the femur, and paralysis of the muscles of the leg. Many times in his experience reposition is easily accomplished at the second trial in most difficult cases.

A successful reduction is indicated by the characteristic snap when the head slips into place, by palpation, and by the *x*-ray. The limb is then held in position by plaster-of-Paris, the position varying with the degree and kind of deformity. After about four weeks the plaster dressing is removed, the part subjected again to palpation and the *x*-ray. If it is in a satisfactory position it is again placed in a plaster dressing for three months. When the position is unsatisfactory after removal of the plaster-of-Paris reposition should again be attempted, but he abandons the bloodless method, if after three trials, he fails. After the plaster-of-Paris dressings he attaches great importance to massage and gymnastic exercises.

In some cases, notably the older ones, there is a fixation of the head in the acetabulum, brought about by mechanical means and not muscular action, the head being held too tightly by the acetabulum. He remedies these by a subcutaneous osteotomy.

The impossibilities of the bloodless method depend upon the lack of development of the acetabulum, derformity of the head and neck, and conformation of the ligamentum teres and the capsule, but in these cases the open operation remains. When failure has resulted from the first method he has been able, by the open operation, to bring his cures from seventy-five per cent up to eighty per cent of all his cases.

If diagnosis is made early the treatment is much easier, and in the future, results will be as satisfactory as in the present treatment of clubfoot.

OTOLOGY.

BY R. BISHOP CANFIELD, A. B., M. D., ANN ARBOR, MICHIGAN.
CLINICAL PROFESSOR OF OTOLOGY, RHINOLOGY AND LARYNGOLOGY IN THE UNIVERSITY OF MICHIGAN.

THE RADICAL OPERATION IN CHRONIC MIDDLE EAR SUPPURATION.

DOCTOR EDWARD BRADFORD DENCH, of New York City, reports 19323 cases of suppurative otitis media (*Archives of Otology,* Volume XXXIV, Number I) treated in the New York Eye and Ear Infirmary during eight years, 14487 chronic and 4836 acute. Two hundred eighteen suffered from some intracranial complication occurring more frequently in the chronic cases.

Doctor Dench says there are four essentials to success in radical operation: (1) Complete removal of upper wall of canal so as to thoroughly expose the tympanic vault. (2) Removal of posterior wall of canal, avoiding the facial nerve, carrying out this step so completely as to obliterate the posttympanic space. (3) The obliteration of the hypotympanic space. (4) A thorough currettement of the tympanic end of the Eustachian tube to cause a perfect closure of the canal. It is only by careful attention to these details that the operator can reasonably hope for success in a large majority of cases.

The period of convalescence is much shortened if after the bone operation is finished and a suitable plastic operation is made upon the canal the entire cavity is covered with skin grafts according to the method of Balance, either at the time of operation or from five to ten days later. Dench skingrafts at the time of operation in all cases unless—

(1) Hemorrhage is too profuse to permit application of the grafts.
(2) Unless the dura has been extensively exposed.
(3) Unless the sinus has been extensively exposed.

In these cases the wound is allowed to cover with granulations before the grafts are applied.

Of ninety-eight cases operated, seventy-one were cured, sixteen showed some discharge for several months, five were failures. Two deaths followed, one of pneumonia the other four of meningitis, which latter was probably present before operation.

In the majority of cases hearing was improved; in a few it was decreased. The mere exposure of the dura either over the middle cranial fossa or over the sinus is in itself no menace to life. When the dura is perforated either by the disease process or by accident the area should be packed off to prevent infection of the subdural space and to drain any product of inflammation.

In nine per cent of his cases there was some interference with function of the facial nerve after operation. This is probably due to tearing away of the chorda which is always destroyed during the operation, and it is quite possible that a slight hemorrhage takes place into the sheath of the nerve sufficient to cause some interference with its function. This can be disregarded and will clear up in the course of a few weeks. The return of function can be assisted by the internal administration of strychnin and by the use of the galvanic or the faradic current, preferably the latter, to the muscles of the face.

LARYNGOLOGY.

By WILLIS SIDNEY ANDERSON, M. D., Detroit, Michigan.
ASSISTANT TO THE CHAIR OF LARYNGOLOGY IN THE DETROIT COLLEGE OF MEDICINE.

SPONTANEOUS TONSILLAR HEMORRHAGE.

Lewis S. Somers (*Journal of the American Medical Association*, October 15, 1904) reports a case in a woman, aged seventy-one years, who had an attack of acute tonsillitis followed by abscess which ruptured spontaneously. Two days after rupture a sudden and severe hemorrhage occurred. Pressure, a solution of tannic acid, and ergot internally were used with success. The case illustrates the danger of allowing a peritonsillar abscess to open spontaneously after considerable destruction of tissue has taken place.

HEMORRHAGE OF THE LARYNX.

John Edwin Rhodes (*Journal of the American Medical Association*, October 29, 1904) classifies hemorrhages from the larynx as follows: (1) Those cases in which there is loss of blood through the mucous membrane of the larynx, and in which the main symptom is hemoptysis; (2) those cases in which there is no spitting of blood but in which the evidences of hemorrhage are found upon careful laryngoscopic examination of the larynx, in an extravasation of blood in the tissues beneath the mucous membrane. The etiologic factors are traumatisms; inflammations; necrosis accompanying syphilis, cancer or tuberculosis; blood conditions, such as purpura hemorrhagica, variola hemorrhagica, hemophilia, scorbutus, anemia, pseudoleukemia, diabetes, pronounced albuminuria, hepatic cirrhosis, the passive congestions of heart disease, fibrosis of the lung, et cetera; and finally there are cases where no assignable cause can be discovered. The immediate exciting cause seems to be in the majority of cases some unusual vocal effort, or coughing, sneezing, et cetera. The amount of blood expectorated is usually small in amount. The author does not agree with the dictum of Lennox

Browne, that "a hemorrhage from the larynx is almost always indicative of serious disease. Sudden impairment, or a complete loss of voice is a common symptom. Diagnosis is made by a careful laryngoscopic examination. Regulation of the voice, mild astringents and adrenalin are recommended. Sedatives are given to allay cough or irritation. A number of cases are reported.

NEUROLOGY.

By DAVID INGLIS, M. D., Detroit, Michigan.
PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE DETROIT COLLEGE OF MEDICINE.
AND
IRWIN HOFFMAN NEFF, M. D., Pontiac, Michigan.
ASSISTANT PHYSICIAN AT THE EASTERN MICHIGAN ASYLUM.

A CLINICAL STUDY OF HEMIPLEGIA IN THE ADULT.

Theodore H. Weisenburg, M. D. (*Journal of the American Medical Association,* February 25, 1905). Weisenburg's article is founded on one hundred sixty cases which he has had under observation. Heredity existed in fourteen of the cases. The author states that "perhaps the predisposition to hemiplegia depends on an inherited tendency to the diseased condition of the blood-vessels. Pre- and posthemiplegic pain are considered." He says that "while there is no satisfactory theory to account for the occurrence of prehemiplegic pain, several satisfactory explanations have been given for posthemiplegic pain, namely, lessened blood supply, with a consequent nutritional disturbance, accidental injury to paralyzed parts, causing a neuritis, and the situation of the lesion—cortical or subcortical."

Vasomotor disturbances are very common in hemiplegia. Such phenomena as a "feeling of cold" and a cyanosis, more or less localized, are not infrequently seen. The writer also believes that vasomotor disturbance plays an important rôle in the edema sometimes observed in cases of hemiplegia. Weisenburg cites authors to the effect that the term "posthemiplegic chorea" is a misnomer. The various disorders of movement following hemiplegia are not choreiform movements. The author is inclined to accept Bonhoeffer's theory, which accounts for posthemiplegic movements, by ascribing it to a lesion involving the anterior cerebellar peduncle, and he cites a case in support of this theory. The author also makes mention of cerebral, muscular atrophy in hemiplegia, and says that he has found it in all his cases. He mentions various theories to account for the symptom, expressing no preference. Weisenburg believes that the arthropathies often seen in these cases can be explained on a mechanical basis. He thinks it probable that the cause can be ascribed to the forced immobility, plus the pulling on the articulations and the tendons by the weight of the paralyzed member.

The important references and the quite extensive bibliography make the paper a timely and valuable one. I. H. N.

THE FUNCTIONS OF THE CEREBELLUM.

Edward Lodholz, M. D. (*New York Medical Journal and Philadelphia Medical Journal,* February 11, 1905). The author, in this article, gives the pith of our knowledge on this subject. An able bibliography is appended. The article is a good résumé of the important literature on the physiology of the cerebellum. The writer quotes Wundt's statement, namely, that "the functions of the cerebellum belong to the darkest part of the central nervous system," and furthermore, he says that the experimental and clinical investigation has disproved the old idea that the cerebellum has distinct functions, independent of the rest of the cerebrospinal axis. It would appear that the one function which can be credited to the cerebellum, as a distinctive one, is the function of coordination. Notwithstanding other functions have been ascribed to this part of the brain, these are now disregarded. Lodholz also quotes Luciani and Ewalt to the effect that "when the cerebellum is inactive, it appears that the cells in other parts of the nervous system are capable of performing the functions normally assigned to the cerebellar cells. The functional relation existing between the semicircular canals. and the cerebellum, and the apparent sympathy of the two, is emphasized.

From a review of the paper it is clear that physiologists are agreed that the cerebellum plays an important rôle in the maintenance of the equilibrium of the body, but that this function is subservient to its connection with the rest of the nervous system. The author, concluding his article, quite clearly sums up our knowledge of the cerebellum when he says that "a critical study of the theories advanced to explain the normal functions seem too inadequate to account for all the phenomena. It appears conclusive that the cerebellar cells are continually exerting an influence on other nerve centers, but with reference to the true nature of this action, nothing of certainty is known." I. H. N.

THERAPEUTICS.

By DELOS LEONARD PARKER, Ph. B., M. D., Detroit, Michigan.
LECTURER ON MATERIA MEDICA IN THE DETROIT COLLEGE OF MEDICINE

ANTITOXIN RASHES.

Doctor Frederick A. Sutliffe, of Philadelphia, in a paper published in the February number of *The Therapeutic Gazette,* discusses the subject of rashes resulting from the use of diphtheria antitoxin. He first takes up the question of diagnosis and says that not always is the physician able to say at a glance "This is the rash of antitoxin." Generally, however, the ringworm-like appearance of the antitoxin rash, shading in color from faint pink to a fiery red, the urticarial papular eruption, and the ever-present itching, make the diagnosis easy.

The rash caused by antitoxin assumes many forms. The urticarial element is usually present but may be subdued. Of six hundred cases in which antitoxin was used, one hundred twenty-three developed rashes. These rashes may be described roughly as follows: Macular, ten; urticarial lesions, fifty-three; maculopapular, twenty; scarlatinaform, five; large, blotchy, slightly elevated areas, thirty; small diffuse macular, five. The rash is apt to change from hour to hour. The most important of the rashes is the so-called scarlatinal type. The urticaria and lack of typical appearance in some parts of the body help to exclude scarlet fever as the cause. In some cases mistakes of diagnosis may occur.

Antitoxin rash may appear in a few hours after the injection has been made, or it may delay its appearance for as long as three weeks. The onset of the rash is usually preceded by a rise of temperature ranging from 100° Fahrenheit to even 105° Fahrenheit. There may also be "joint pains" more or less severe. The most annoying feature of the rash is the itching it produces.

The doctor calls attention to the circumstance that urticaria may arise during an attack of diphtheria from causes other than the antitoxin.

In the series referred to above the rash appeared in one on the second day after injection, five on the fourth day, six on the fifth, nineteen on the sixth, twenty-one on the seventh, twenty-two on the eighth, five on the ninth, eight on the tenth, six on the eleventh and so on down to one on the twentieth.

The day of the disease on which the antitoxin is administered does not affect the time of the appearance of the rash.

The length of time the rash continues varies in different cases. It may disappear in a few hours or it may continue several days. Again it may disappear and then return even at an interval of several days.

Blondes are affected more frequently than brunettes.

PATHOLOGY.

By ALDRED SCOTT WARTHIN, Ph. D., M. D., Ann Arbor, Michigan.
PROFESSOR OF PATHOLOGY IN THE UNIVERSITY OF MICHIGAN AND
DIRECTOR OF THE PATHOLOGICAL LABORATORY.

INFECTIOUS JAUNDICE.

Sandwith (*Journal of Tropical Medicine*, August, 1904) summarizes our knowledge concerning this obscure condition. Infectious jaundice is an acute infectious disease characterized by fever, jaundice, enlargement of liver and spleen, nephritis and certain nervous symptoms. The disease at times becomes epidemic during the summer months; it is not contagious and immunity seems to be afforded after one attack. Outbreaks of this disease have occurred in Great Britain, Germany, the United States, Smyrna and in Egypt. Doubtful cases have been reported from other regions and it is probable that the disease exists under other names in many tropical countries. Males from twenty to thirty years of age are most frequently attacked, the poorest classes suffer severely but the disease is not confined to them. No etiological organism has yet been found in the disease but the *Culex* *fatigans* has been suspected of transmitting the infection. The disease itself begins with a short incubation period of one or two days, and its general course may be divided into three stages. In the first stage there is a primary fever lasting three to five days, commencing suddenly with rigors, temperature elevation to 102° or 104°, vomiting and general pain. Jaundice marks the beginning of the second stage, usually showing itself on the fourth or fifth day in connection with enlargement and tenderness of liver and spleen, and albuminuria. After seven to nine days the fever subsides and the jaundice gradually disappears. The third stage is characterized by a secondary fever which lasts for seven to nine days. The whole attack is usually about three weeks long. The chief concomitant symptoms are headache, giddiness, insomnia, delirium in grave cases, typhoid state, muscular pains in nape of neck and in calves of legs. Epistaxia, intestinal hemorrhage, and hemorrhages from gums, kidneys and beneath the skin are not infrequently seen. The urine is at first scant, acid and high-colored with a trace of albumin, during the second stage the color becomes greenish, albumin is abundant and blood-casts numerous. In favorable cases there is a urinary crisis on the seventh or ninth day and polyuria succeeds. In fatal cases the patient usually dies of uremia. The mortality in three hundred cases was thirty-two per cent. The postmortem appearances closely resemble those of typhus fever, the chief findings being cloudy swelling of organs and hemorrhages. The disease closely resembles clinically relapsing fever, but is distinguished from it by the absence of the *Spirochaete Obermeieri*. It is distinguished from bilious remittents by the absence of parasites in the blood; and from acute yellow atrophy by the enlargement of the liver. It has been regarded as a form of yellow fever, but differs both in the urinary appearances and in the temperature charts. The question arises if the disease is not identical with Weil's disease which it very closely resembles, the latter being a milder disease. If they are the same infection the term Weil's disease should be abandoned.

EDITORIAL COMMENT.

PEARLS BEFORE——NEWSPAPERS.

THAT editors of newspapers care nothing for the betterment of mankind would perhaps be an unfair statement. That their chief aim consists in pandering to idle curiosity, if not to still more ignoble feelings, can hardly be denied. The reason for the statement of a fact so obvious is found in the reception of Doctor Osler's remarks regarding age, not merely by the yellow press, but by the most conservative and decent papers.

Here is a man who for twenty years has occupied important positions in two of our most prominent universities, and for five years before that was almost as well known in the United States as he was across the Canadian border. One of the most prolific writers, one of the most facile and forcible speakers, one of the best-loved physicians and teachers who ever lived on this continent, he is so well known that any editor from Portland, Maine, to San Diego, or Portland, Oregon, to New Orleans could call up his leading medical acquaintance and find out enough about Doctor Osler to prevent such an exhibition of half-cockedness as has just been made. The editor could have learned that Doctor Osler is not merely the author of the most widely-read medical text-books, but one of the keenest investigators. More to the present purpose, he could have learned of Doctor Osler's tireless work at the prevention and cure of disease, of the special efforts he has made in the struggle against typhoid fever, pneumonia, and tuberculosis; of his broad philanthropy for the public and the medical profession; rarely merely a critic, more frequently the projector of good and useful plans of various kinds. He could easily learn of numerous evidences of an unusually warm-hearted and generous nature, never weary of doing a kindness, whether to an unknown pauper, cheered by words and revived by food and drink, or an unfortunate physician broken by illness or reverses.

Even if editors could not learn of these characteristics, one might at least suppose they could recognize wisdom when they see it, and separate wheat from chaff. And yet, with a dozen topics of interest, with the wisdom of a rare mind playing over some of the most important problems, they pick out a jest, plainly labelled as such, and set it forth day after day with all the assistance of scareheads and cartoons.

And the results prove the correctness of their choice. Like backwoods folk who soberly discuss the anatomy and physiology of the sea serpent, as its annual appearance is announced, senators, governors, captains of industry, preachers, and, saddest of all, college functionaries—all these take up the dire news. They shout that they are stronger, more active and "better" than ever before. That they are in some ways, we may well believe, but in the present case the accents are often suspiciously sibilant; sometimes one can see the drooling ill-concealed by the trembling hand. The words are the words of Caleb the son of Jephunneh: "Lo, I am this day forescore and five years old. As yet, I am as strong as in the day that Moses sent me; as my strength was then, even so is it now," but the voice and the actions remind us more of Barzillai: "I am this day forescore years old; and can I discern between good and evil? Wherefore should thy servant be yet a burden unto my lord and king?" Repeated assertions are not characteristic of men conscious of their power. It is not the cock with the longest spurs that crows most menacingly. All the wails and howls, suggesting the belief that Doctor Osler has the desires and powers of a cross between Ivan the Terrible and Nero, might be borne with in patience if they merely showed the intense lack of humor of men over forty.

The sad feature of the incident is the complete silence regarding other parts of Doctor Osler's masterly address. For this is the well-weighed reflection of a rare mind taking advantage of a rare opportunity. He was talking to a cultivated audience, gathered at the call of the most influential university outside of Europe. Like all thinking men, they could enjoy a joke, as the disciples of Socrates did, as those who could in some manner understand Lincoln could. For, in his capacity for humor, Doctor Osler shows his kinship to the wise of all ages, just as much as he does in his power of creation and expression of serious matters. What treasures he poured out to this select gathering, and beyond it to a world of readers chiefly concerned in divorce court reports, antipodean battles, or neighborhood homicides, wire-tapping gamblers and the leading of the strenuous and simple life by others.

Just to name some of the topics is itself enough to stimulate thought in one who has not handed his birthright of thinking to a "cub reporter." The danger of routine for a teacher; the advantage of change of scene; the value of independence of thought; the necessity of constant development; the risk of mental atrophy; the facility of acquiring mental astigmatism, of becoming prejudiced and narrow; the advantage of youthful associates and assistants, that do for the cooling brain what the warm body of the Shunamite did for the body of the poet-king. Along with each of these suggestions was a shower of others full of interest. What a step in advance would come about if the rulers of colleges, now so self-satisfied, having taken a preliminary course to clear their brains, could spend a semester or two with such a teacher and his staff! No better use could be made of the wealth of a billionaire afraid of dying rich, than to pay say ten thousand a year to all who took such a course, with a prize of five million for the school making the greatest advance.

Then how much better, instead of naming all the men over sixty who have done good work—a comparatively easy matter—to call attention to Doctor Osler's remarks on medical schools and hospitals. How much might be done if people could realize how slow our progress has been in medical study and teaching—still so far behind that in other civilized lands. If they could know the sordid poverty not only of trained men, but of raw material; such a poverty as Pericles had in mind when he said "It is not poverty that we condemn but the lack of ability to avoid it." What a loss, not to publish, in every paper in the country, the picture of what can be done, what still is not done in some eight score medical schools—the real study of disease; the mastery of its recognition, the knowledge of how to care for it; the advantages of accurate modes of investigation and exact lines of thought.

In comparison with such topics, pregnant with importance to every man, woman, and child in the land, but ignored or concealed by many whose duty it is to consider them—in comparison with them, the feelings of many men over sixty who now feel injured seem as the dancing of motes in the sunlight.

PSYCHOPATHIC CLINICS AND PSYCHOPATHIC LABORATORIES.

THE question as to what is the most rational, the most humane method of dealing with those who are so unfortunate as to become mentally disabled has received very careful consideration in recent years. In this practical age when it is once made plain that a certain thing is the right thing to do, doing it follows as a matter of course. As soon as it became apparent that both the best interests of the victim of insanity and of the community where he resided required that he be separated from his accustomed surroundings and provided with a home suited to his disordered mental state such a home was soon created.

Every intelligent community now recognizes this need and has met it in the most liberal, we might even say, generous manner. Our asylums for the insane in this state in their appointments and administration bear pleasing testimony to the spirit of charity and good-will which pervades the hearts of our people. We are expending in round numbers one million of dollars annually for the care of the insane housed in the five public asylums of this state. It is recognized on every hand that insanity is on the increase. The conditions in society which result in mental deterioration or dethronement are in some respects clearly defined but there is much yet to be learned as to the relation of mind and body and of the causes which operate to disturb the harmony of their action. The problems which mental diseases offer for solution must be taken up and dealt with in the same careful painstaking manner that has characterized the recent researches as to the causes, development and prevention of disease of the body alone. Those forms of disease where the body and mind are both disordered are much more complex in their nature, but they are amenable to the same methods of investigation as are typhoid fever, diphtheria or pneumonia.

It is only necessary that the conditions favorable for the study of such diseases be created in order that practical results in the way of clear exposition of causes, methods of prevention and cure, be made plain and be put into practice.

So far our energies and attention have been almost wholly consumed in caring for the immediate needs of the victims of mental disease but it is becoming very generally apparent that some of this effort would be more wisely expended in an endeavor to search out the causes which lead to insanity and put a stop to them in their incipiency.

The psychopathic hospital and the psychopathic clinic is designed to meet this need; places where all that modern facilities and intelligence have devised in the way of searching out the causes of disease can be focused upon these complex problems of mental disorder. It is wise and effective economy which judiciously utilizes the means already at hand and turns them to account in this direction.

The State University with its well equipped medical department, which can with ease be brought into effective cooperation with the various state asylums for the insane in the study of the causes which lead to insanity is an ideal situation for this advanced movement to accomplish something that may be utilized in checking a class of diseases which are already proving a formidable menace to our civic welfare.

ANNOTATIONS.

THE RESIGNATION OF DOCTOR CUSHNY.

DOCTOR ARTHUR R. CUSHNY, professor of materia medica and therapeutics in the University of Michigan, has resigned to accept a similar professorship in the University of London. The irreparable loss sustained through this resignation could not be prevented by increase of salary, as the offer from abroad gave the doctor an opportunity to return home, than which no inducement could be more alluring. Doctor Cushny's service to medicine will be considered in a subsequent issue. Pending the appointment of his successor, Doctor Charles W. Edmunds, who has assisted in this department of medicine for several years, will fill the vacancy occasioned.

A JOURNALISTIC CHANGE.

DOCTOR JOSEPH MACDONALD, JR., has announced the severance of his connection with the *International Journal of Surgery,* over which he has presided as manager and managing editor for the past fourteen years. The relinquishment was occasioned by the doctor's purchase of the *American Journal of Surgery and Gynecology,* which will hereafter be issued from New York City under the new name of *American Journal of Surgery.* In the circular letter conveying this information the doctor says: "This move was made for the purpose of enabling me to publish an independent *practical* surgical journal under absolute *professional* control and along such lines as will best serve the interests of the general practitioner."

THE BILL TO OUST DOCTOR BAKER.

THE uncertainty of positions controlled by politicians was forcibly demonstrated by the recent passage of a bill in the Michigan legislature. The measure was presented under the pretext of an act to reorganize the State Board of Health but was prepared for the purpose of ousting Doctor Henry B. Baker from the secretaryship, a position he has held since the establishment of the board in July, 1873. The act under which he entered the service of the state contains the clause that "so long as he shall faithfully discharge the duties" of secretary he shall remain in office. In face of this contract with the people of the State of Michigan the new measure, which, among other changes specified, invests the governor with power to appoint the secretary, has become law. Doctor Baker is retired, and his successor, Doctor Frank W. Shumway, of Williamston, has assumed control. The doctor graduated from the medical department of Western Reserve University in 1881 is a general practitioner, has served on the Board of Pardons, and will undoubtedly make an efficient officer, but he is confronted with the possibility of political decapitation six years hence, owing to a gubernatorial prerogative that is almost certain to militate against the effectiveness of the health department.

ANOTHER PHYSICIAN REGENCY NOMINEE.

Doctor Orson Millard, of Flint, was nominated at the recent Democratic State Convention at Battle Creek for Regent of the University of Michigan. Thus the medical profession gained recognition on the two leading tickets for the important office of Regent. The doctor is a graduate of the medical department of the University, class of 1870. He is a native of Michigan, having been born in Utica on October 27, 1845. Immediately after graduating he began the practice of medicine in Flint, and, with the exception of one year devoted to postgraduate study, his medical career in that city has remained unbroken. In 1872 he was married to Miss Sarah A. Gardner, daughter of Thomas C. Gardner, D. D., formerly of Ann Arbor. In the earlier years of his practice he was surgeon of the Port Huron and Lake Michigan Railway Company, and later occupied a similar position with the Grand Trunk Railway Company. He has been physician at the Michigan State School for the Deaf, and president of the United States Board of Pension Examiners for Genesee County. He is identified with the Masonic fraternity and several societies, and was one of the incorporators of the Knights of the Loyal Guard, in which organization he has served since the date of its inception as a member of the board of directors, and the executive committee of the board of directors, as wel as in the capacity of supreme medical examiner. Doctor Millard's name is mentioned in "Ziemssen's Cyclopedia of the Practice of Medicine," and he also has favorable notice in *Chemiker Zeitung*, of Cöthen, Prussia.

THE PASSING OF DOCTOR PRESCOTT.

Doctor Albert Benjamin Prescott, of Ann Arbor, the oldest professor as regards years and service in the University of Michigan, died of pneumonia on the 25th ultimo, aged seventy-two years. He graduated from the medical department of the University in 1864, and became identified with the teaching force of the institution in 1865, when he was appointed assistant professor of chemistry. In 1870 he was elevated to the professorship of organic and applied chemistry, acceded to the deanship of the School of Pharmacy in 1876, and was appointed to the directorship of the Chemical Laboratory in 1884. His life work is detailed in another part of this issue, a photoengraving of the doctor acompanying the sketch. Memorial exercises were conducted in his honor under the auspices of the faculties and students of the departments of Medicine and Pharmacy, on February 28, in Sarah Caswell Angell Hall, at which addresses were made by President Angell and Professors Vaughan, D'Ooge, and Herdman. Doctor Prescott was married on Christmas day, 1865, to Abigall Freeburn, who, with one son, survives him. The medical faculty passed the folowing resolutions pertaining to his demise:

WHEREAS, After a lapse of many years, the hand of Death has once again been laid upon the Department of Medicine and Surgery, and a beloved friend and colleague, Albert Benjamin Prescott, has been taken from us, happily for him, while still in the possession of his powers and at the post of duty; therefore

Resolved, That in the death of Doctor Prescott this department has suffered an irreparable loss. A man conspicuous for wide and accurate knowledge, entering in the pursuit of science, of rarest judgment, of unswerving fidelity to his work and to his faith, and unselfishly devoted to the advancement and welfare of this department, he had the admiration and esteem of his colleagues, students and fellowmen.

Through his great benevolence, his gentleness and unfailing courtesy, he endeared himself to all who knew him, and upon the developing characters of the young men and women with whom he came in contact he exerted a far-reaching and beneficent influence.

As the founder of laboratory research in this University he occupied a unique position, and through the inspiration of his work and counsel he stimulated the energies and ambitions of many of his students to successful careers of scientific investigation which in turn have added to the renown of the University.

While mourning the loss of one of those whose place can never be filled, we take consolation in the thought that his influence remains as a precious heritage to this department and to the University.

Resolved, further, That a copy of these resolutions be transmitted to the family of Doctor Prescott and that they be spread upon the minutes of the faculty and that a copy be furnished the University publications and the public press.

FREDERICK G. NOVY,
GEORGE DOCK,
ALDRED S. WARTHIN.

CONTEMPORARY.

TECHNICAL TERMS AND THE VERNACULAR.

[SAINT LOUIS MEDICAL REVIEW.]

UNDER the head, "On the Value of Words Which are Plain," the *American Medical Journalist* cites approvingly an article in the *Medical Standard* that complains of "a well-known author and surgeon who prides himself upon his terminology" because he "never mentions any portion of the body by the English names (which everyone understands) when a Latin equivalent can be found. From the tractus intestinalis to the arteria anastomotica uterini (*sic*) his erudition runs its interminable gamut. The result is that not ten per cent of readers ever attempt to read his articles."

Upon this the *American Medical Jouralist* remarks: "Prescriptions are written in Latin in order that they may be pain (plain?) to the pharmacist and obscure to the layman."

Now without commenting on the attitude which is content with the assumption that the technical Latin of the physician may fitly be as obscure to him as the technical Latin of the pharmacist is plain to him, we ask, Is it correct to assert that the purpose of writing prescriptions in Latin is that they may be obscure to the layman? That, surely, is merely an incidental advantage, in so far as it holds good at all. Nowadays, of educated folk, about as many have some smattering of Latin as have not. But, if we understand history aright, prescriptions are still written in Latin mainly from a natural conservatism preserving unbroken the practice of a time when Latin was the universal medium of intercourse of the educated. Of the unlearned of these times, a large proportion would have been equally bothered had medical or any other writings been in English. We are of opinion that the idea that prescriptions are written in Latin to blind the layman is an *ex post facto*—beg pardon, a subsequent—explanation.

We are inclined to view the matter from a point of view rather different from that taken by the *Journalist* and the *Standard*. Never was science—and particularly, perhaps, medical science—more cosmopolitan, less provincial, than today. We constantly hear complaints of the inconveniences consequent on a multiplicity of tongues, and aspirations for a "universal language of science." But the time is not yet. Meanwhile, we have in Latin, by both tradition and usage, the nearest possible approach thereto. Every medical practitioner of every country knows, or has once known, a modicum thereof, sufficient with but little effort to enable him to grasp such Latin terms as he is likely to encounter in an ordinary medical article. On the other hand, consider the difficulties placed in the way of foreigners when vernacular terms are used in place of the Latin technical terms, or at least of the domesticated form of the Latin terms. Suppose, for instance, that in place of "craniotomy" we speak of "cutting the skull." Apart from the loss of technical precision, what an unnecessary difficulty we place in the way of the foreigner who may be interested in our paper! Just this very difficulty occurs with German, which more than other languages has gone mad on the subject of breaking loose from tradition and substituting the vernacular for the Latin or Latinized forms. A Frenchman, an Italian, a Dutchman, a Spaniard, an Englishman or American, would at once recognize the German form, Laparotomie, and so have one word less for which to turn over the pages of his dictionary, than if the author wrote, as he probably would write today, Bauchschnitt. We speak feelingly when we say that we have a better smattering of German, so far as a knowledge of construction, et cetera, goes, than of Italian or Spanish; yet we can translate a page of the *Riforma medica* or of the *Revista de las ciencias medicas* in less time than we could translate a quarter of a column of the *Wiener klinische Wochenschrift*; and why? Because in the Italian and the Spanish, and largely, though not so entirely, in the French, every technical term has a Greek or Latin basis, the English cognate of which at once explains it, thus affecting a saving of fifty per cent in vocabulary needed.

But, in addition to this general argument, there is in this country a special reason for the retention of the Latin terms. We do not here have to look abroad for the foreigner physician in our audience; he is here right in our midst. In no country in the world are there so many physicians whose training has been received in so many foreign countries and in such varied tongues, as in America. The whole of them, of whatever nationality, are acquainted with the technical terms formed on the classical basis. We, also, are, or ought to be, equally well acquainted with them. Let us, therefore, instead of sighing for an at present impracticable "universal language of science," make use of the tolerable substitute we have, and employ Latin and Greek terms more, and vernacular ones less, in technical phraseology.

We would close with the following propositions:

(1) Technical terms are the most precise modes of expression, and consequently the least obscure to those adequately technically educated, and equal precision can never be attained, even by technical men, with the use of the vernacular.

(2) Practically all scientific technicalities in every tongue today are either pure Latin or Greek, or words so constructed therefrom as to be perfectly comprehensible, by analogy with similarly constructed words in their own tongue, by men of other adequately technically educated nationalities.

MEDICAL NEWS.

THE PORTLAND MEETING OF PHYSICIANS.

ARRANGEMENTS have been completed under which the Northern Pacific Railway will run three solid special trains through to the Pacific coast for physicians who desire to attend the forthcoming meeting of the American Medical Association. The first special will run through from Chicago, leaving June 30 and reaching Saint Paul July 1, thence proceeding west and stopping at Gardiner for a five-and-one-half-day tour of the Yellowstone National Park. A second solid special train will leave Chicago July 1, reaching Saint Paul July 2, and proceeding west to Gardiner for a similar tour of the Yellowstone. A third special train will leave Chicago July 6, running through to Portland, with stops at several important points. The Northern Pacific has been designated the official route for the handling of the physicians, and the national officers will go west on one of the first two specials, in both of which accommodations are very nearly exhausted. Arrangements are now being made by numerous small parties for space in the third special, and it is possible that additional trains will be arranged for, if the demand for reservations continues heavy. Each special will be made up of standard Pullman equipment, with through dining cars and ample baggage accommodations. Every facility which adds to luxurious comfort en route is being arranged for, and the train schedules have been worked out with especial reference to the convenience of the doctors. The third special will arrive in Portland the morning before the convention opens. Especial attention is called to the fact that berth reservations should be made immediately through C. A. Matthews, General Agent of the Passenger Department of the Northern Pacific Railroad, Chicago. The best service can be afforded if the physicians will cooperate in this matter, arranging their plans accordingly.

A POSITION AS PHYSICIAN (FEMALE) OF THE GOVERNMENT HOSPITAL FOR THE INSANE.

The United States Civil Service Commission announces an examination on April 26 and 27, 1905, at the places mentioned in the accompanying list, to secure eligibles from which to make certification to fill a vacancy in the position of physician (female) in the Government Hospital for the Insane, Washington, District of Columbia, at $1,500 per annum and quarters, and vacancies as they may occur in any branch of the service requiring similar qualifications.

Only unmarried women will be admitted to this examination.

The examination will consist of the subjects mentioned below, weighted as indicated:

SUBJECTS.	WEIGHTS.
(1) Letter-writing (a letter of not less than one hundred fifty words on one of two subjects given	5
(2) Anatomy and physiology	5
(3) Chemistry, materia medica, and therapeutics	10
(4) Bacteriology and hygiene	10
(5) Surgery and surgical pathology	15
(6) Obstetrics and gynecology	15
(7) Mental diseases	20
(8) Experience (rated on application)	20
Total	100

Applications will be received from graduates of recognized medical schools. Credit will be given for experience obtained in a professional capacity in institutions for the care of mental diseases, in general hospitals, and in the actual performance of surgical operations and the care of operative cases.

Two days will be required for this examination.

Age limit, twenty-five to forty years on the date of examination.

This examination is open to all citizens of the United States who comply with the requirements.

Applicants should at once apply either to the United States Civil Service Commission, Washington, District of Columbia, or to the secretary of the board of examiners at any place mentioned in the accompanying list for application Form 1312. No application will be accepted unless properly executed and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

As examination papers are shipped direct from the Commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated by the applicant. The Commission will, therefore, arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers.

The examination may be taken on the date mentioned at any of the places named below. *No request will be granted for examination on any other date or at any other place.* Application blanks may be secured from the secretary of the local board at any of the following-named places:

Michigan: Detroit, Grand Rapids, Manistee, Marquette, Saginaw, Sault Ste. Marie.

Ohio: Cincinnati, Cleveland, Columbus, Ironton, Toledo, Zanesville.

Indiana: Evansville, Fort Wayne, Indianapolis, Lafayette.

Illinois: Chicago, Peoria, Springfield.

Wisconsin: Appleton, Ashland, Chippewa Falls, La Crosse, Madison, Marinette, Milwaukee.

MINOR INTELLIGENCE.

GOVERNOR WARNER has reappointed Attorney Samuel T. Douglas a member of the Detroit Board of Health.

DOCTORS HOWARD W. LONGYEAR and C. Hollister Judd, of Detroit, have established a free dispensary on Michigan avenue.

DOCTOR H. H. VAN TUYLE, of Detroit, has received the appointment of medical intern at the Ionia State Prison.

A PORTRAIT of Doctor Arthur R. Cushny, painted by Percy Ives, of Detroit, will be presented to the University of Michigan by the senior medical class of that institution.

AN Antituberculosis Society was formed at Grand Rapids, Michigan, on March 1. Doctor Victor C. Vaughan addressed the public gathering incident to the important occasion.

THE late Professor Puschmann, Vienna, bequeathed to the University of Leipzig the sum of $125,000, with which to establish a museum of the history of medicine, and a school for research in the subject.

THE Manhattan Eye, Ear and Throat Hospital is erecting a new building on Sixty-fourth street, near Third avenue, at an estimated cost of $600,000. The structure will be nine stories in height and will be constructed of ornamental brick, with trimmings of stone and terra cotta.

DOCTOR HENRY MARTIN WELLS, Medical Dirtctor of the United States Navy, retired, died recently, in New York City, at the age of seventy years. Doctor Wells entered the naval service in 1861, serving in the capacity of surgeon throughout the Civil War, and was actively connected with the navy from that time until his retirement in 1897.

A RECENT monthly report of the Board of Health of the Philippine Islands cites the fact that a total of three thousand six hundred eighty-three lepers are now living in the archipelago. They are scattered throughout the various provinces, Cebu, with six hundred seventy-five afflicted, having the largest number. Only one province is entirely free from the disease.

THE Ohio State Board of Health has extended its field of usefulness by undertaking bacteriological examinations free of charge to physicians. Sputum of suspected tuberculous individuals and diphtheria and typhoid fever material may be presented for examination, but the privilege does not extend to physicians in whose cities the board of health maintains a laboratory.

DOCTOR S. A. KNOPF, of New York City, recently addressed the house ways and means and health committees and the senate finance and health committees of the Michigan legislature on the subject of tuberculosis, the occasion affording opportunity for some pertinent remarks regarding the proposed establishment in Michigan of a state sanatorium for the treatment of persons afflicted with consumption.

RECENT LITERATURE.

REVIEWS.

INTERNATIONAL CLINICS.*

THIS volume keeps up the standard of this excellent series. Among articles on treatment may be mentioned especially one on "The Excessive Use of Drugs in the Treatment of Chronic Diseases, with Reference to Medicinal Intoxication," by George Hayem; one on "Indications for the Dechloridation Treatment," by Adolph Javal. Of those on Medicine, one on "Chronic Polycythemia," by F. Parker Weber, is especially timely and valuable. Surgery presents a number of practical articles, as "Lateral Curvature of the Spine," by E. H. Bradford; "Nerve Anastomosis for Infantile Palsy," by James K. Young. One on the "Symptomology and Diagnosis of Glenard's Disease" would not seem to belong here, but the author's statement that another paper is to follow, on Treatment, raises one's expectations. "Postclimacteric Hemorrhages," by F. A. L. Lockhart, represents Gynecology. D. R. Brown presents an instructive clinic in Neurology. Two of the most valuable articles on these subjects are by Aldred S. Warthin, on "Recent Investigations Concerning the Pathology of the Infectious Diseases," and Charles F. Craig on the "Etiology and Pathology of Amœbic Infection of the Intestines and Liver." All the articles in the book are well selected.

*Edited by A. O. J. Kelly, A. M., M. D., of Philadelphia. Volume IV. Fourteenth Series, 1905. Philadelphia and London: J. B. Lippincott Company, 1905.

PROGRESSIVE MEDICINE.*

THIS volume gives a complete résumé of all the leading articles of the past quarter on the following subjects: Diseases of the Thorax and its Viscera, including the Throat, Lungs, and Blood-Vessels; Dermatology and Syphilis; Diseases of the Nervous System; Obstetrics.

We have commented so often upon the excellence of this work that it is unnecessary to say any more. Each volume that appears, however, only increases our desire to recommend the work to others. The up-to-date physician and the scientific investigator cannot get along without a visitor of this character, whose counsel is always good.

*Progressive Medicine, Volume III, September, 1904. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 284 pages, 19 illustrations. Per annum, in four cloth-bound volumes, $9.00; in paper binding, $6.00, carriage paid to any address. Lea Brothers & Company, Publishers, Philadelphia and New York.

DISEASES OF THE NOSE, THROAT, AND EAR.*

THAT the third edition of Bishop's work has been called for is evidence that it has found a place as a standard medical work. In the preface of this edition the author states that special attention is given the latest developments of diphtheria, blood-serum therapy, the medical and surgical management of mastoid diseases, the related diseases of the eye and nose and hay-fever. We note with pleasure that little space is given to the anatomy of the organs. In most single-volume works these descriptions are superficial and inaccurate. The book covers systematically all of the common, and most of the rarer conditions. We note that three of the nine chapters devoted to diseases of the pharynx are given to diphtheria, besides a chapter on intubation in the section devoted to the larynx. As a description of diphtheria is to be found in all works devoted to internal medicine, we feel that some of this space might have been devotd to other subjects to better advantage. One chapter only is given to the diseases of the accessory cavities of the nose. The chapter on "Related Diseases of the Eye and Nose" is especially useful. The newer method of direct laryngoscopy is carefully given. While the larger portion of the work is devoted to diseases of the nose and throat the section on diseases of the ear is sufficient for the needs of the student or general practitioner. The section on mastoid disease is an excellent one. The book is well illustrated and reflects credit on the publisher. As a single volume work it compares favorably with any with which we are familiar. W. S. A.

*Diseases of the Nose, Throat, and Ear and their Accessory Cavities. By Seth Scott Bishop, M. D., D. C. L., LL. D., Author of "The Ear and its Diseases;" Honorary President of the Faculty and Professor of Diseases of the Nose, Throat, and Ear in the Illinois Medical College; Professor in the Chicago Post-graduate Medical School and Hospital; Surgeon to the Post-graduate Hospital and to the Illinois Hospital; Consulting Surgeon to the Mary Thompson Hospital, to the Illinois Masonic Orphans' Home, and to the Silver Cross Hospital of Joliet, et cetera. Third edition. Thoroughly revised, rearranged, and enlarged. Illustratetd with 94 colored lithographs and 230 additional illustrations. 564 pages, royal octavo. Price, extra cloth, $4.00, net; sheep or half-Russia, $5.00, net. F. A. Davis Company, Publishers, 1914-16 Cherry street, Philadelphia.

HARE'S PRACTICAL THERAPEUTICS.*

THAT this work has supplied, and at the same time continues to supply, the medical profession with something of the greatest value is attested by the fact that ten editions have appeared in as many years. An edition a year for a period of ten years certainly shows industry and progressiveness on the part of the author, enterprise on the part of the publishers, and satisfaction on the part of the medical profession. The work is too well known to require a minute description. It is enough to say that it covers all the ground its title suggests and that it brings down to date every subject or topic it presents.

*A Text-Book of Practical Therapeutics; with especial reference to the Application of Remedial Measures to Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. With special chapters by Doctors G. E. de Schweinitz, Edward Martin and Barton C. Hirst. New (tenth) edition, much enlarged, thoroughly revised and largely rewritten. Octavo, 908 pages, with 113 engravings and 4 full-page colored plates. Cloth, $4.00, net; leather, $5.00, net; half morocco, $5.50, net. Lea Brothers & Company, Publishers, Philadelphia and New York, 1904.

CAT.

EDWARD SWIFT DUNSTER.

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ORIGINAL ARTICLES.

MEMOIRS.

EDWARD SWIFT DUNSTER, A. M., M. D.*

A BIOGRAPHICAL SKETCH.

BY REUBEN PETERSON, A. B, M. D., ANN ARBOR, MICHIGAN.
PROFESSOR OF OBSTETRICS AND GYNECOLOGY IN THE UNIVERSITY OF MICHIGAN.

I REMEMBER as a boy how bored and tired I used to be on Washington's Birthday. We were made to sit on rather hard benches and listen to eulogies on the Father of our Country, interspersed with the reading of exciting passages from his farewell address. I often wondered if the man had never done anything wrong and if he were really interesting. I believe I should have honored him much more if he had only acted as do most boys in the cherry tree incident. I know now that I did Washington an injustice, thanks to the way the subject matter was presented; for he was a man like other men, with the same passions and weaknesses. It was just as hard for him to do the right, and avoid the wrong, as for thousands of others who preceded and have followed him. What made him stand out preëminently amongst his fellows were certain traits of character which were needed by this nation just at that particular time. He was a superb soldier, honest, and possessed of that sublime courage which buoys up its possessor, no matter what reverses he may suffer. He was a pioneer and leader. He showed the way and the others followed. Thus, it seems to me peculiarly appropriate that "Founders' Day" should be celebrated on his birthday: for the founders of the Department of Medicine and Surgery of the University of Michigan were also pioneers and leaders. At the time the medical department was established there was the same need of men of stern resolve, and of high ideals, with the courage of their convictions, if the movement was to be a success. That they, and those who succeeded them did not labor in vain, is, I am sure, the belief of those assembled here this evening. We meet to do them reverence, not because they were men more Godlike than their fellows, but because, although perhaps better endowed than the majority of men, they were, after all, but part and parcel of that medical profession which has ever striven upwards. We honor them for the good they have accomplished with the means at their command. The study of their lives and characters cannot help being of benefit to us who are confronted with the present problems, and who must strive to look into and plan for the future. If we labor as wisely and as well as those who have gone before us, we need have no fears for the future of the school, whose welfare we have so much at heart.

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*An address delivered before the faculty and students of the Medical Department of the University of Michigan on "Founders' Day," February 22, 1905.

To me has been assigned the task of depicting the life and character of Edward Swift Dunster, who succeeded to the Chair held by Abram Sager, the first Professor of Obstetrics and Diseases of Women and Children in the University of Michigan. In some respects he was the direct antithesis to Doctor Sager, for it is generally conceded that he was the most logical, eloquent, and interesting lecturer the school has ever had. On the other hand we are given to understand that Doctor Sager, while scientific to a degree, presented his facts rather disconnectedly, and was far from being an eloquent speaker. In other respects, however, we shall find that the two men were considerably alike. They were both scholarly, passionately fond of reading, and naturally of quiet, retiring dispositions. While their natural talents pushed them to the front, and made them at times the most conspicuous men on the faculty, you feel that, in reality, publicity did not appeal to them. Their real enjoyment came from the hours spent in their libraries among their beloved books.

Edward Swift Dunster was the third child of Samuel and Susan Dow Dunster, and was born in the village of Springvale, Maine, September 2, 1834. He came of good old New England and English stock, being directly descended from Henry Dunster, the first President of Harvard College. Doctor Dunster's father, Samuel, compiled a small book entitled "Henry Dunster and His Descendants," in which may be found a very interesting sketch of their early ancestor's life. Henry Dunster was distinguished, not because of his learning and scholarship, which were considerable, nor because he was the first president of a college which has since become so famous. He publicly announced his opposition to infant baptism, which so shocked the orthodox spirit of the colony that he was forced to hand in his resignation. He conducted his defense with dignity and ability, but would not recede from his position, although the loss of the Presidency meant much to him. Thus did the narrow spirit of the community distinguish him above all others, and, by making of him a martyr to his honest convictions, left to his descendants a glorious heritage.

Nearly two hundred years later, in 1879, his descendant, Edward Dunster, made an able argument before the American Medical Association at Atlanta. Briefly, for I shall refer later to this address, Doctor Dunster was defending his colleagues and himself for teaching in a medical school whose faculty taught certain branches to homeopathic medical students. The same narrow spirit which had forced the resignation of his ancestor, Henry Dunster, was now at work in opposition to him and his colleagues. Listen to his closing sentences and see if they do not ring true. "Do the opposite and adopt this amendment, and it is a stride centuries backward in the historic march of medicine, for it places us right along side of those old worthies, the Asclepiadæ, where laws forbade the revealing of 'sacred things except to the elect,' and who exacted from students and strangers the tests of initiation before admitting them to share in their knowledge. Finally in all your discussions and in your decisions forget me and forget the great University which I have the honor to represent, for if you can stand the disaster and discredit that must come with the adoption of this amendment we can certainly stand your censure." May our Department and our University ever have at our command such defenders.

Doctor Dunster was educated in the public schools of Providence, Rhode Island, and entered the academic department of Harvard University in 1852. That he made the most of his college course is demonstrated by the thorough knowledge of the classics displayed in his subsequent papers and addresses. He must have been popular with his fellows for he was a member of the Psi Upsilon Fraternity, and the Hasty Pudding Club. He was also elected a member of the Phi Beta Kappa Society, this honor being conferred on eight of the members of the class having the highest rank. He graduated from Harvard in 1856 with high honors. In 1859 he received the degree of Master of Arts from the same University. For two years subsequent to his graduation he resided in Newburgh, New York. Here he tutored a young man for college, and according to the custom of the time began the study of medicine as a pupil of Doctor M. Stevenson of Newburgh.

In 1858 he removed to New York, and became a student in medicine with a man whose influence on his future life was most marked. This was Professor E. R. Peaslee, one of the pioneer gynecologists and abdominal surgeons of this country. Peaslee in this year had been appointed Professor of Obstetrics and Diseases of Women in the New York College of Medicine and Surgery, and was fully launched upon his career as an ovariotomist, which was to make him widely known both in this country and abroad. He was an enthusiast in his work, and inspired his followers with the highest degree of confidence and emulation. It is not strange, therefore, that Doctor Dunster, then a young man of twenty-four, falling under such influences, should have imbibed a love for the subjects of Obstetrics and Diseases of Women. During the remaining thirty years of his life there were times when circumstances compelled him to turn his talents and energies in other directions, but after these demands were satisfied we see him returning to the specialties which were so dear to him.

Doctor Dunster attended medical lectures at Dartmouth College in the summer of 1858, and graduated from the New York College of Medicine and Surgery in the following year. He was the recipient of the highest prize for general proficiency in his studies. The day following his graduation in March, 1859, he was appointed interne at Saint Luke's Hospital. He resigned from this position in the following August in order to accept the Demonstratorship of Anatomy at Dartmouth College. In the same year he started in practice in New York City.

The first two years of a physician's practice in a large city are trying to say the least. I presume Doctor Dunster, in spite of his good record, native ability, and influential friends, probably was no exception. Be this as it may, he was among the first to tender his services to his State at the outbreak of the war in 1861. In the same year he secured the position of Assistant Surgeon in the Regular Army after a competitive examination. Although a young man of only twenty-seven, his superior officers soon became cognizant of his marked executive ability. During the first year of his service he was made Medical Inspector under General Rosencrans. Later he held the same position under General McClellan in Eastern Virginia. He supervised the erection of the army hospitals, and had general charge of the same. At one time he had command of the hospital transports, and attended to the shipping of the wounded to the northern hospitals. Later he was ordered to Philadelphia where he became Superintendent of Turner's Lane Hospital. At the same time he served on the Board of Examiners of candidates for admission to the army medical service. For a time he was assistant to Doctor William A. Hammond, then Surgeon-General of the army. From Washington he was transferred to the West Point Military Academy, where he remained until his resignation from the army in 1866.

Doctor Dunster's army career may be said to be typical of the man. His taste led him towards the more intellectual side of the army surgeon's life, just as other men delighted in the long hours during which they were compelled to wield the scalpel. He was distinctly an organizer, and his executive ability was of the highest. This latter talent does not always coexist with the scholarly mind.

After his resignation from the army, he resumed his practice in New York. In July, 1866, he was made editor of the *New York Medical Journal,* a position which he held for five years. Here again it was not chance but merit and scholarship which led to his being chosen for this important position. As an editor he was a marked success. His alert mind grasped the needs of the general practitioner as well as the specialist and both were provided for in the pages of his journal.

He inaugurated and developed the plan of giving the readers of his journal short abstracts of the best current medical literature. This is a common enough custom now in medical journalism, but it was quite an innovation in those days.

The "little doctor" as he was nicknamed in the army, must indeed have led a strenuous life during the seven years from 1866 to 1873, at which time he removed to Michigan. During the first five of these years he was editor of a great medical journal. At the same time he held an active service as attending physician to the Children's Out Patient Department of Bellevue Hospital. From 1868 to 1870, as Professor of Obstetrics and Diseases of Women and Children, he lectured in the University of Vermont. From 1869 to 1874 he held the same chair in the Long Island College Hospital. In 1871 he was appointed Professor of Obstetrics in Dartmouth College, a position he held until his death. In 1869 he became resident physician to the Infant Hospitals on Randall's Island, New York. The management of these institutions had been exceedingly lax until Doctor Dunster assumed charge. The mortality among the one thousand children on the Island had been very high, so much so as to lead to severe criticism. Doctor Dunster, with his characteristic vigor quickly instituted a new regime. Through hygienic and sanitary reforms the mortality was greatly reduced, a fact which was favorably commented upon by his superiors and the medical profession. This in itself, was eminently gratifying, but probably Doctor Dunster took as great if not greater satisfaction in utilizing to the utmost the opportunities for observation and study provided by the large collection of children directly under his charge. His lectures show that the scientific side of his profession was not lost sight of in the midst of the details of hospital management.

In spite of the demands of his official and professional work Doctor Dunster found time for social life. His pleasing address and facile tongue caused him to be in great demand as an after-dinner speaker. From conversation with one of his old friends I learn that his strength at this time was taxed to the utmost. Probably this fact had much to do with his acceptance of the position of lecturer in Obstetrics, and Diseases of Women and Children, tendered to him by this University in October, 1873. He doubtless hoped by relinquishing his New York positions and leading a quiet life in a University town, to regain his health which had been considerably impaired by overwork.

Let us for a moment consider in retrospect this medical school at the time he was called to it. Although only twenty-three years old, the Medical Department of the University of Michigan had established an enviable reputation throughout the country. It should be remembered that the school was in one way an experiment, for it was the first medical school in the country to be founded as a distinct department of a State University. Would the people of the State support such a school, which at the best must be an expensive affair?

Private medical schools and those connected with the richly endowed universities came more nearly to paying expenses from their tuition fees. One of the fundamental principles, however, of the State University was small fees, so that the poorest student might avail himself of the advantages of a higher education. Situated in a small inland town, our school had, from the outset, to compete with schools more favorably situated, as far as clinical advantages were concerned. Could a school so located build up an adequate clinic by attracting patients from afar? These and other problems had to be met and solved as the years rolled on.

Fortunately, for the welfare of the school, in the fifties and sixties, medical teaching was largely didactic; hence the lack of clinical material was not felt as keenly then as would have been the case had the school been started later. The faculty early appreciated the importance to the medical student of thorough laboratory instruction. This was inaugurated at an early date, and in 1873 had made the school famous. Again, at the very beginning it took an advanced stand as regards the qualifications for medical education. It was the first medical school in the country to reject candidates for admission for lack of preliminary education. Although among the first to establish a graded three-year course, in 1873 only two lecture terms of six months each, together with a year spent as a pupil of some reputable practitioner was required.

At the time of Doctor Dunster's appointment, the lecture system in medical instruction was in full sway. There were four lectures each day, while clinics were only given on one day in the week. As a matter of fact it was not until 1869 that the Regents at the earnest request of the medical faculty could see their way clear to the establishment of a University Hospital. In that year was set aside a dwelling house on the north boundary of the campus for hospital purposes. This building now forms the northern end of the present Dental building.

Not much of a hosptal, you will say, but at least it was a beginning. And, best of all, it was begun in the right way, for it was from the first under the direct management of the clinical professors, and every patient was there primarily for clinical instruction. Possibly lack of room prevented the caring for private, as well as purely clinical patients, in this initial hospital. Possibly the medical faculty, or the Board of Regents recognized the incompatibility of mixing these two classes of patients. Be that as it may, the fundamental plan upon which this small hospital was established thirty-six years ago, was the correct one, and this general plan remains the same today. And, that it is the right one, is shown by the growth of the institution from a few up to two hundred seven beds when the new psychopathic ward is opened.

In 1876 the legislature, generously aided by the city of Ann Arbor, added two pavilions to the hospital. Doctor Dunster had had a great experience in the erection of army hospitals, and the faculty naturally turned to him for suggestions. The pavilions were erected on the general plans submitted by him. I am given to understand that they were intended to be merely temporary structures, the idea being that after a few years of use a hospital became so thoroughly infected as to necessitate its destruction. Yet this was six years after the inauguration of antisepsis by Lister and the true recognition of the causes of wound infection.

Doctor Dunster came to this University at a glorious period in the history of obstetrics. Up to about 1870 the idea of the infectious nature of puerperal fever, although pointed out in 1845 by Oliver Wendell Holmes, had not gained much ground. A few enlightened physicians convinced by the arguments and experiences of Semmelweiss took the proper precautions against the infection of the lying-in woman. The great mass of the profession, however, remained unconvinced. In 1870 Lister's applications to surgery of Pasteur's discovery of the true nature of wound infection had a great influence upon obstetrics. The period from 1870 to 1880 may be called the antiseptic decade of obstetrics. Lying-in women were treated antiseptically before, during, and after confinement, with the result of greatly reducing the terrible ravages of puerperal fever in maternity hospitals. The prophylactic era in obstetrics may be said to date from 1880. From that time to the present great advances have been made in the treatment of the lying-in woman. It has been proved that vigorous antiseptic measures are unnecessary and even injurious. Asepsis in surgery and obstetrics have become synonymous. The puerperal mortality has been reduced to almost nothing, until it is as safe, if not safer, for the woman to be confined in a properly equipped maternity hospital, as in the most luxurious home.

Even mightier were the strides of the great men who were devoting their energies to the alleviation of the diseases of women and children. Sims, Emmet, and Thomas were revolutionizing plastic gynecological surgery, while such men as Peaslee and the Atlees were establishing ovariotomy upon a firm foundation. The decade from 1880 to 1890 saw the greatest advances in pelvic and abdominal surgery. The onward and upward march of the gynecological surgeon claimed the attention of the world.

In order to fully appreciate Doctor Dunster's relation to these changes that were taking place in the specialties he was called upon to teach in this school, it is necessary once again to refer to the clinical material at his disposal from 1873 to 1888. We can afford to look at the question dispassionately now, for the school has put behind it those trying days. In spite of assertions to the contrary, our clinical teaching material compares favorably with other medical schools, except in certain directions. That time and energetic endeavor will round out our material is as certain as that our school will go on and maintain the high position it has acquired. But, as I have attempted to show, in Doctor Dunster's time, clinical material and hospital facilities were sadly lacking; practically there was no such thing as clinical obstetrics. Students were graduated in those days without ever having seen a confinement. In the eighties I find by the proceedings of the Board of Regents that certain sums of money were devoted to the support of obstetrical patients, but it was merely a desultory movement, and must have been without much effect. It was somewhat the same in gynecology. I have had access to Doctor Dunster's records for the year 1881 and 1882, and I find that he saw during that time at the hospital only some seventy gynecological patients. Of these only thirty-one remained in the hospital. There were only thirteen minor operations performed in his clinic during that year. To be sure the major operations in those days were performed by the Professor of Surgery; but they were not many, and they were done under the most unfavorable surroundings. Those of you who would become disheartened at conditions today will find encouragement by turning back to major surgery as it was performed in this medical school in the old days. Then the operating room was situated in the upper lecture room of the old Medical Building. Perhaps at a previous hour in the same room had occurred a demonstration in anatomy. After the operation had been performed the patient had to be carried down stairs and transported across the campus to the hospital. Their ideas of antisepsis and asepsis naturally were of the crudest, even when they tried to develop a technique. For instance, they used to boil the gauze used for dressings, and then hang it across the amphitheater seats to dry. The mortality under these conditions was high, and the healing of a wound by the first intention was a rare occurrence. These statements are not made in the spirit of criticism. They were doing their best, and those of us who are working today would not have done any better. I am simply calling attention to the condition of affairs at the time that Doctor Dunster entered this University. Is it then at all strange that under these trying conditions Doctor Dunster, who by temperament was not intended for a surgeon, should have turned his attention in other directions? Naturally a scholar, with a clear, logical mind, and with an extraordinary gift of forceful expression, he became the expounder of other men's achievements. Happy, indeed, is the man, who with a natural gift, pursues his bent, and rises head and shoulders above his contemporaries. Such was Doctor Dunster. I know it from the testimony of every pupil of his with whom I have talked. As a lecturer he had few equals and no superior.

In this connection, I will quote from a letter I have just received from Doctor J. N. Martin, pupil, assistant, and successor to Doctor Dunster. After regretting that continued illness prevents him from being with us and after referring to Ford, Palmer, Maclean and Frothingham, he says: "Last but facile princeps in the lecture room or editor's chair, was our scholarly Dunster. It is no disparagement to the others of that faculty to say that he was the most brilliant lecturer and writer among them all. Every one enjoys a logical presentation of the subject, and no one left Doctor Dunster's class-room or read his articles, without a clear conception of the subject under discussion. Listening to him gave pleasure like that derived from the study of a fine painting. His language was almost perfect, his diction polished, and his argument clear and convincing. * * * His students love to remember him in the lecture room."

Doctor Dunster was not a man of particularly commanding presence. On the contrary he was rather below the average height, with a large head, and a high, intellectual forehead. He spoke with few or no notes, and he usually lectured sitting in a chair. He became intensely interested in his subjects, speaking slowly, distinctly, and without hesitation. He held the undivided attention of his class, no matter how abstruse might be the subject of his discourse. An old graduate told me that on one occasion Doctor Dunster had some trouble with his feet, and came into the lecture room on crutches. He seated himself in his chair, and began to speak. The pain in his legs becoming unendurable, after an apology to his class, he placed both feet high up on the desk, and continued his lecture, holding the attention of his audience to the end of the hour. A man who could do that had not missed his calling.

Doctor Dunster was not a prolific writer. The list of his contributions, which, for the sake of completeness I have appended to this sketch, does not comprise more than fifteen articles at the most. It seems a pity he did not publish more, for what he did write was exceedingly well executed. On paper, as in the lecture room, he expressed himself easily, elegantly and forcibly.

His early and deep interest in medical education is well illustrated by his address delivered at the commencement of the Medical Department of the University of Vermont in 1869. This address is a plea for the higher culture of the physician. This he believed should be brought about by the substitution of a scientific for a classical education, as preliminary to the study of medicine. He urges the lengthening of the medical course, and claims that the separate branches should be taken up in their natural and progressive order. He asserts "That the present system of medical teaching is more senseless than superficial; but we may confidently expect, in view of the progressive spirit of the age, that we shall establish a more reasonable and adequate curriculum for medical studies." This shows that Doctor Dunster was in advance of his time on the question of medical education, for it was some years before these changes were brought about. He retained his deep interest and broad views on medical education during the remaining twenty years of his life. His ideas and counsel must have been of great assistance to his colleagues on the faculty during the transition period of the medical curriculum.

Doctor Dunster's address entitled "The Logic of Medicine," delivered on the twenty-fifth anniversary of the New York Academy of

Medicine, is a model of good English and clear thought. It is a plea for the inductive method of reasoning as applied to medicine. He warns against slavish deference to authority, and upholds the value of independent investigation. Perhaps its chief charm, aside from its own clear logic, is the optimism which breathes from every line. Here is a specimen: "The future, then, is full of promise, and we may well content ourselves with the reflection that as centuries upon centuries have been spent in bringing about our present advanced position, so, hereafter, each successive decade will give a steadily increasing development."

Perhaps one of the best, if not *the* best, of Doctor Dunster's contributions, was one to which I have already alluded. I refer to the "Argument made before the American Medical Association at Atlanta, Georgia, May 7, 1879, against the proposed amendment to the Code of Ethics, restricting the teaching of students of irregular or exclusive systems of medicine." The main question at issue has been settled long ago, and does not particularly interest the present generation, but a review of the history of that question which caused so much hostile criticism to be hurled at the University and its medical faculty, shows that, when the attacks became too bitter to be longer endured, Doctor Dunster, by unanimous consent, was chosen to answer them, and answer them he did in such a logical manner that the bigots who made the attack were glad enough to escape by never allowing the amendment to come to a vote.

The chief characteristic of Doctor Dunster's more strictly scientific communications consisted in the thoroughness with which the literature of the subject under discussion was brought up to date. In this way he avoided the not uncommon failing of some medical writers of announcing discoveries, which a little more careful reading would have shown had been made before. Belonging to the local, county, state and national medical societies, and being a frequent attendant at their meetings, he was often called upon to engage in the discussions. Here, naturally, he was at his best. His retentive memory gave him the advantage of having the subject matter at his tongue's end. He defended his opinions vigorously, but was always courteous in his bearing towards those who differed with him. In fact, this unfailing courtesy was one of his striking characteristics. I have been impressed with the repetition of the word "gentleman" as used by those with whom I have conversed about him.

Doctor Dunster's family life was ideal. Mrs. Dunster was the daughter of the Reverend Doctor Sprole of Newburgh, New York, formerly Chaplain and Professor of Ethics in the United States West Point Military Academy. The Dunsters were married in 1863, and the union was a singularly happy one. There were four children—three daughters, and a son who died in infancy. Mrs. Dunster was a woman of education, of great intellectuality, and a most hospitable person. She was a prominent figure in the social life of Ann Arbor, and her kindly influence extended in many directions.

Doctor Dunster died at Ann Arbor, May 3, 1888, at the age of fifty-four. The immediate cause of death was pneumonia, although his health had been failing for a year or more. For a few months prior to his death, he practically was obliged to give up his University work, and was confined most of the time to his house. Two days after his death, at a special meeting of the University Senate, resolutions were passed from which I extract the following:

"As a physician he was most sympathetic with the afflicted, kindly frank in his announcements, true and unswerving in his deductions, a benefactor in numberless households. In educational affairs as a counselor, and an advocate for the interests of the University, he was clear in his propositions, broad in the range of his experience, and vigorous in his pleadings, ever urging the best aims of professional culture—to us the members of this Senate he has endeared himself by the consistent integrity of his personal relations, and a most genial bearing in the occasions of daily intercourse."

Thus lived and died Edward Swift Dunster. Who can say how far-reaching has been his influence? Thoughts which he promulgated may have been the life inspiration of numbers who have failed to give public testimony, but keep the secret in their hearts, and give him his just due. This is merely conjecture. What we *have* learned from the study of his life, is that he was an able, honest, upright, man and physician; that he loved this University, and especially its Medical Department, and that he served it, and everything connected with it, faithfully. In other words, he put forth the best there was in him. Can we ask more of any man?

CHRONOLOGICAL LIST OF DOCTOR DUNSTER'S WRITINGS.

THE RELATIONS OF THE MEDICAL PROFESSION TO MODERN EDUCATION. An address delivered at the Commencement of the Medical Department of the University of Vermont, June 16, 1869. *New York Medical Journal,* 1870, Volume XII, pages 481 to 503.

THE LOGIC OF MEDICINE. An address delivered on the occasion of the twenty-fifth anniversary of the New York Academy of Medicine, December 30, 1872. *New York Medical Journal,* 1873, Volume XV.

REMARKS ON DOUBLE MONSTERS. *Peninsular Journal of Medicine,* 1874, Volume X, pages 241 to 253.

THE HISTORY OF ANÆSTHESIA. *Peninsular Journal of Medicine,* 1875, Volume XI, pages 337 to 355.

THE HISTORY OF SPONTANEOUS GENERATION. "Transactions of the Ann Arbor Scientific Association, 1876, Volume I."

THE USE OF THE OBSTETRIC FORCEPS IN ABBREVIATING THE SECOND STAGE OF LABOR. "Transactions of the Michigan State Medical Society, 1877, page 33."

Prophylaxis of Puerperal Convulsions. *Toledo Medical and Surgical Journal*, 1878, Volume II, pages 281 to 296.

Polycystic Ovarian Tumor, Firm and Extensive Adhesions. With Co-existing Peritonitis; Ovariotomy; Death in Five Hours from Shock. *Michigan Medical News*, 1879, Volume II, pages 95 to 98.

An Unusual Large Carneous Mole. Error in Diagnosis. *Michigan Medical News*, 1879, Volume II, pages 5-6.

Cascara Sagrada, Rhamnus Purshiana. *New Preparations*, 1879, Volume II, page 56.

An Argument Made Before the American Medical Association at Atlanta, Georgia, May 7, 1879, Against the Proposed Amendment to the Code of Ethics, Restricting the Teaching of Students of Irregular or Exclusive Systems of Medicine. The Physician and Surgeon, 1879, Volume I, pages 237 to 256. 256.

A Case of Fracture of the Humerus: Death on the Eighteenth Day from Fatty Degeneration of the Heart, with Remarks on Osteogenesis. The Physician and Surgeon, 1879, Volume I.

A New and Simple Ovariotomy Trocar and Canula. *Medical Record*, 1885, Volume XXVII, page 252.

Comparative Mortality in Armies from Wounds and Diseases. Date and place of publication not found.

A RÉSUMÉ OF SOME OF OUR RECENT KNOWLEDGE CONCERNING DISEASES OF THE PANCREAS.

D. M. COWIE.
L. T. ROCHE.
A. M. COOKE.

[FROM DOCTOR D M. COWIE'S PRIVATE LABORATORY.]

During the past two years in particular the medical world has had its attention called to a group of diseases which hitherto have been recognized almost wholly at the autopsy table. The difficulties in the way of the recognition of disorders of the pancreas during life have been and still are very great. Accordingly it is with profound interest that the development of any method which offers assistance in this direction is watched. For years we have thought that if fat is discovered in the stools to any great extent the pancreas is at fault and in most cases we have reason to believe that it is, especially if this condition continues indefinitely or for any considerable length of time. Missed digestion is not at all improbable and we may occasionally, in certain disorders of the gastrointestinal tract, particularly those of motility, find globules of fat in considerable numbers in the stools. Tumors of the pancreas have been recognized for some years particularly since Senn's paper appeared in 1885, but not during their incipiency.

Simple acute and chronic inflammatory conditions have been surmised but not definitely proven. Hemorrhagic pancreatitis as well as active acute pancreatitis has been very infrequently diagnosed. All of these conditions have been demonstrated very frequently at autopsy but the correlation of the symptoms in these cases has as yet given us no typical symptom complex. As functional disturbances occur in all of the organs of the body that are open to more or less thorough investigation and can be demonstrated, it is not at all unlikely that they also occur in the pancreas. The recognition of this is, however, still beyond our power.

The work of Pawlow and his assistants has brought to us many facts which help us to better understand the normal workings of the pancreas. Thus the fact that acid when emptied into the jejunum increases the digestive power of the intestinal and pancreatic juices has taught us to administer acid in cases of achyla and achlorhydria not after, but some time before the taking of food.

Perhaps the most important clinical advancement that has been made, at least the one that commands our greatest attention, is the work of Doctors Cammidge and Robson of London, whose articles appeared about one year ago. Because of the interest that this research has created I have had my assistants abstract these articles somewhat thoroughly. D. M. C.

* * *

THE PATHOLOGY AND SURGERY OF CERTAIN DISEASES OF THE PANCREAS.

Mayo Robson, in his first lecture delivered before the Royal College of Surgeons of England March 7, 1904, introduced his subject by calling attention to the comparative neglect there has been regarding diseases of the pancreas, its physiology, and its pathology. He further called attention to the anatomical relation of the pancreas to other structures, the variations in form that sometimes occur, and the involvement of these structures in certain pathological processes; such as ulcer, cancer, et cetera. The following is a somewhat thorough abstract of Robson's article which appeared in *The Lancet* of March 19, 1904:

Anatomy.—The pancreas is an acinotubular gland, closely resembling the salivary glands in structure, but differing from them in being softer and looser in texture. It lies deep in the epigastrium against the posterior wall of the abdomen at the level of the second lumbar vertebra. In front of it lies the stomach, to the right the duodenum and to the left the spleen. It is not enclosed in a distinct capsule, but is surrounded by areolar tissue which dips down into its interstices and divides the gland into lobes, these in turn are subdivided into lobules and alveoli. The interalveolar connective tissue supports the blood-vessels and in certain parts of it are found collections of polygonal cells known as the islands of Langerhans. These cell islets have an important bearing on metabolism; they are not connected with the ducts in the higher vertebrates, and have apparently no relation with the proper secretion of the gland. They probably secrete a ferment which is poured into the blood. This may be called a glycolytic ferment and when it fails, either from atrophy of these cells or from inflammation, one of the results is glycosuria. Accessory pancreatic nodules have been found in the ducts of Santorini, in the walls of the stomach, duodenum, jejunum, or ileum, in each case having a small independent duct which empties into the contiguous intestine. These nodules are subject to the same physiological and pathological changes as the gland proper.

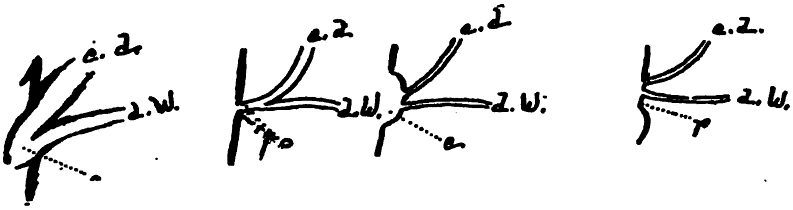
The excretory duct runs from left to right, usually on the posterior surface. At the neck it turns downward, backward and to the right in the head, reaches the left side of the common bile duct and both go to the posterior and internal wall of the second portion of the duodenum. In addition to the chief duct or Wirsung's duct the pancreas has an accessory duct which opens independently into the duodenum a short distance above the opening common to the pancreatic duct and bile duct. After an examination of one hundred cadavers Opie concluded that the accessory duct was capable of taking up the work of the chief duct in only fifty per cent of cases.

The common bile duct passes behind the first portion of the duodenum, and then behind and to the inner side of the second portion, lying in a groove between the duodenum and the head of the pancreas. According to Helly it is completely embraced by the pancreas in sixty-two per cent of cases. The passage of a gall-stone may cause a pancreatitis either by pressure upon the gland or its duct. In like manner a catarrhal process in the duodenum may pass up into the diverticulum of Vater and thus to the pancreatic duct causing its obstruction and resulting in a pancreatitis. In either case the head of the gland becomes swollen, the common duct is compressed and jaundice follows.

Normally the common bile duct and the pancreatic duct terminate in the diverticulum of Vater. This is a conical, shell-shaped cavity varying in length from three to eight or nine millimetres. Its orifice at the papilla is only 2.5 millimetres in diameter and thus is narrower than the common bile duct in any part of its course. It is possible for a stone to pass through the duct and lodge at the papilla. The bile may then be forced into Wirsung's duct and bring on a hemorrhagic pancreatitis. In some cases the ampulla is absent when the terminations of the common and pancreatic ducts are liable to variation. "There may be said to be four types. First, the normal type (a) in which the ampulla is present. Second, (b) the pancreatic duct joins the common duct at some little distance from the duodenum. The ampulla is absent and the duct enters the duodenum at a small flat oval surface. Third, (c) the two ducts open into a small fossa in the wall of the duodenum while the caruncle and the ampulla are both absent. Fourth, (d) the caruncle is well developed, the two ducts open side by side at its apex and the ampulla is absent.

Pancreatic Secretion.—The ferments contained in the pancreatic juice are four: (1) trypsin, a proteolytic ferment; (2) amylopsin, a starch-splitting ferment; (3) steapsin, a fat-splitting ferment; and (4) a milk-curdling ferment. In addition the island of Langerhans pours a secretion into the blood.

Symptomatology and pathology.—With the increase in knowledge of the physiological action of the gland, various symptoms have been brought forward as diagnostic of derangement of its function. At the same time it is difficult to be certain of the diagnosis for a number of reasons. "First, it is seldom the case that the pancreas alone is diseased. Second, every functon performed by the pancreas, except the glycogenic, and this is not yet settled, can be taken up by some other organ. Third, a considerable portion of the gland may be sloughed off and the remaining portion may carry on its function. Fourth, the disease may lie in the pancreas and the symptoms be referred to another organ." For instance, in cancer of the head, the tumor may cause pressure on the common duct and lead to intense jaundice with distention of the gall-bladder. It may compress the intestine and lead to intestinal obstruction or it may press upon the neighboring ganglia, causing pain which may be referred to any but the real cause.



[ADAPTED FROM ROBSON.]

c. Cup-shaped depression in wall of duodenum.
c. d. Common duct.
p. Papilla.
a. Ampulla of Vater.
o. Common orifice.
d. w. Wirsung's duct.

DIGESTIVE SYMPTOMS.

Stools.—Interference with the digestive function in pancreatic disease leads to steatorrhea. This symptom was associated with disease of the pancreas by Kuntzmann in 1820 and by Bright in 1833. It has been noted in acute hemorrhagic, necrotic, and suppurative pancreatitis, in calculus of the pancreas, in cancer and in some cases of cyst in the presence of jaundice. The stools are very often large, soft-formed and of a pale whitish color. The color is due not to the absence of bile, which indeed may be present in normal amount, but to the presence of a large amount of undigested fat, which on cooling gives them a characteristic appearance.

Claude Bernard in experiments which caused the degeneration of the pancreas, came to the conclusion that the pancreatic juice caused the cleavage and emulsification of neutral fats and aided in the absorption of fats in the intestine. It has since been shown that this function is possessed also by the bile, the intestinal juices and the bacteria in the intestinal contents. Consequently steatorrhea cannot be relied upon as an evidence of pancreatic disease. Abelmann and Minkowski in experimenting on dogs found that when the pancreas was entirely removed nonemulsified fats were not absorbed, and emulsified fats, chief of which is milk, were absorbed in small amount. The administration of pig's pancreas aided in the absorption of fats after removal of the pancreas. These observations have been confirmed by Sandmeyer, Cavazzani, Balli and Rosenburg.

The following conclusions are of importance in the diagnosis of pancreatic disease: "(1) Fat occurs in the stools in three forms: (a) as fat droplets; (b) as fatty acid crystals; (c) as soap crystals. (2) The capacity for digestion and absorption of fat are limited; if too much fat be ingested it is found in the stools. (3) Steatorrhea occurs in some cases of jaundice, in some cases of enteritis, and in some cases of pancreatic disease, but in no one of these constantly. (4) When jaundice and interstitial pancreatitis coexist there is great excess of fat in the stools. (5) The presence of fat in the stools in the absence of jaundice and enteritis is suggestive of disease of the pancreas. (6) If the pancreatic reaction (to be described later) be found in the urine in conjunction with steatorrhea some disease of the pancreas is almost certain. (7) If azotorrhea be found together with steatorrhea it is almost certain that the pancreas is diseased, and if the pancreatic reaction, diabetes, and an epigastric tumor be present the diagnosis is certain."

The author then cites a case by Oser in which, in a woman aged thirty-nine, fat and undigested muscle fibers were found in the stools some months before the development of a tumor in the epigastrium, with jaundice. Subsequent operation confirmed the diagnosis of cancer of the head of the pancreas. He states that his experience in a large number of pancreatic cases has been the almost constant presence of a large amount of fat in the feces, either in the shape of oily particles or of fatty acid crystals, which normally should not exceed five per cent.

Azotorrhea, or faulty digestion of albuminous foods.—Clinical and experimental observations have demonstrated the presence of large numbers of unchanged muscle fibers in the stools in pancreatic disease. This symptom is very much improved on the administration of pankreon tablets or of raw pancreas. The conclusions are as follows: "(1) The digestion of albuminous foods is not solely the function of the pancreas. (2) Normal stools contain a small amount of undigested muscle fiber. In disease of the stomach, in enteritis, and in fevers they may be present in excess. Taken alone their presence is no proof of pancreatic disease. (3) If azotorrhea be found together with liporrhea the presence of pancreatic disease should be suspected. (4) If azotorrhea and liporrhea be found associated with diabetes and tumor of the epigastrium some disease of the pancreas is very probable. (5) Azotorrhea and liporrhea together with the pancreatic reaction in the urine make the diagnosis of pancreatic disease certain."

Sialorrhea, or excessive pancreatic secretion.—This has been referred to by Senn, who pointed out a possible causal relation between hypersecretion of pancreatic juice and the diarrhea so often found with cysts and degeneration of the pancreas. Further investigation is required.

Dyspepsia and alteration of appetite.—Dyspeptic disturbances are generally well marked in disease of the pancreas. Anorexia may be so extreme that the patient may become greatly emaciated. Restoration of pancreatic fluid to the intestine by operation or the administration of pankreon tablets or of liquor pancreaticus often relieve the symptoms markedly.

Emaciation.—The disturbance of digestion alone would hardly explain the emaciation which has long been considered a symptom of pancreatic disease. It is probably also due in part to interference with the metabolic function of the gland. Taken with other signs, as fat and undigested muscle fibers in the stools and the pancreatic reaction in the urine it is a valuable aid to a correct diagnosis.

Nausea and vomiting.—These symptoms are frequently associated with pancreatic disease. They are not constant, and may be due to associated trouble in the stomach and duodenum.

PHYSICAL SIGNS.

Tumor.—The location of the pancreas makes it difficult to palpate. Swelling can be detected in acute and chronic inflammation, in cancer or sarcoma of the head, body or tail, and even in abcess. In cystic disease tumor is often the only symptom, its position depending on the part of the gland involved. On the other hand in serious disease of the pancreas it may be impossible to detect any tumor. Absence of swelling does not indicate that the pancreas is not involved, but its presence with other signs is a valuable aid in diagnosis.

Fever.—Fever as a symptom is a variable one and alone would not justify a diagnosis. Taken with other signs, digestive disturbances, fatty stools, tumor and the pancreatic reaction in the urine, it is of very great importance. It is usually present in acute, subacute and suppurative pancreatitis, and absent in chronic pancreatitis, in calculus, cysts and new growths.

Pain and Tenderness.—These symptoms are variable. They are often absent in new growths unless the neighboring ganglia or the stomach or duodenum be compressed or otherwise involved. In the various forms of pancreatitis the pain may be severe. In the acute form the epigastrium is as a rule very tender on pressure, the recti are rigid, and the pain often agonizing. Cysts and small scirrhus growths and calculus may be entirely free from pain. If a calculus should reach the orifice of the pancreatic duct or lodge in the ampulla of Vater severe pain occurs resembling gall-stone colic and will then be associated with jaundice. The pain may be paroxysmal or continuous, may be limited to the epigastrium or may radiate round the thorax. It is frequently in the back, more often under the left scapula or between the scapulæ.

In some forms of pancreatic disease it may be located in the epigastrium and may pass up to the cardiac region, resembling in intensity angina pectoris. To those forms the name "Caeliac neuralgia" has been given. From its variability it will be seen that pain is an aid to diagnosis when taken in conjunction with other signs.

Pressure Symptoms.—From its position and relations, enlargement of any portion of the pancreas may cause pressure symptoms in the neighboring organs, nerves or blood-vessels. Pressure on the portal vein may lead to ascites. On the inferior vena cava to edema of the lower extremities. Pressure on or constriction of the duodenum may lead to symptoms of stricture of the bowel or pyloric stenosis. The stomach may be pushed upwards against the diaphragm or downwards toward the umbilicus. The common duct or the hepatic duct may be occluded producing the characteristic symptoms. Pressure on the solar plexus may cause agonizing pain. Symptoms on the part of the heart or lungs may be caused by pancreatic cyst pressing upwards upon the diaphragm or by inflammatory effusion in the lesser peritoneal sac.

Hemorrhage.—A marked tendency to hemorrhage exists in many forms of pancreatic disease. It may either be localized, occur as the hemorrhagic form, or as general bleeding from wounds and mucous surfaces or into the skin and subcutaneous tissues. Mr. Mayo Robson states that it is his experience in operating on a large number of cases, that hemorrhage is more likely to occur in a patient jaundiced from pancreatic disease than in one jaundiced from gall-stones. The causes are somewhat obscure. It is well known that the coagulating time is delayed. Examination of the blood shows a diminution in the number of blood plates and in the amount of lime. Knowledge of the latter fact has been taken advantage of by the author. He states that it is his practice to give thirty to sixty grain doses of calcium chloride three times daily for from one to two days before operation, and in larger doses by the rectum for a varying length of time afterward.

Jaundice.—Depending on the relation of the common duct to Wirsung's duct and to the head of the pancreas, jaundice may or may not accompany pancreatic disease. If the pancreatitis be associated with gall-stones in the common duct, jaundice will of course be present. In this case the gall-bladder is not distended. On the other hand deep jaundice with distention of the gall-bladder is very significant of cancer of the head of the pancreas. If the pancreatitis be the result of an extension of inflammation through the diverticulum of Vater a catarrhal jaundice of varying intensity follows:

METABOLIC SYMPTOMS.

Diabetes and Glycosuria.—Since Gower—*London Medical Journal,* 1788—connected diabetes with pancreatic disease, numerous other observers, both clinically and experimentally, have substantiated his claim. It is now generally conceded that disturbance of the cells of the islands of Langerhans leads to glycosuria. According to this hypothesis we can explain why glycosuria exists in some diseases of the pancreas and not in others. For instance, in interlobular pancreatitis glycosuria does not exist while in the interacinous form it is constant. It occurs in atrophy of the pancreas, in hyaline degeneration of the islands of Langerhans, and in all cases where the whole gland is involved. Where only a part of the gland is diseased the remaining portion takes up its function and diabetes does not then ensue. This applies also to cysts, tumors and interstitial pancreatitis involving only a part of the gland. Glycosuria is therefore not constant and cannot be relied upon as a symptom of pancreatic disease, but where it exists with other signs grave disease of the pancreas is indicated.

Other Changes in the Urine.—Since the symptoms of disease of the pancrease are in the main, indistinct and indefinite, an effort has been made to determine some sign by which a deviation from the normal can be diagnosed. Attention has been directed to the urine and in turn indicanuria, maltosuria, pentosuria, lipuria, and glycosuria have been brought forward as important aids in diagnosis. The consensus of opinion is that each of these conditions is inconstant, some of them are associated with other disease besides those of the pancreas, and that they cannot be relied upon as an indication of pancreatic disease. The author states that in conjunction with Doctor J. P. Cammidge he hopes to be able to bring forward proofs that a certain reaction may be obtained from the urine in the greater number if not in all diseases of the pancreas. Furthermore, he hopes to prove that acute inflammation may be differentiated from chronic, and simple from malignant disease. He states further that it is only since 1900 that the reaction has been known. That since that time he has systematically applied it in every case in which the pancreas was thought to be implicated and also in a large number of control cases. That the diagnosis was confirmed by operation in fifty-six cases and by autopsy in other cases. He has found it a valuable aid in diagnosis in many cases of cancer of the head of the pancreas in which the symptoms were obscure and thus has been saved the necessity of making an exploratory operation. He quotes the following case: A woman, aged forty-eight, jaundiced for five months, in such good condition that six physicians "of eminence" decided against malignant disease of the pancreas. The urine showed a marked pancreatic reaction—pointing to cancer of the head. The author advised against operation. The patient, however, with the advice of her physicians, insisted upon an exploratory operation. Laparotomy showed a hard, nodular growth of the head of the pancreas, undoubtedly malignant. The absence of adhesions and the presence of a distended gall-bladder gave clear evidence that gall-stones had not been present. He states that he has found the test to be of like value in a considerable number of similar cases.

In several cases suspected from the clinical signs to be malignant, the reaction has pointed to an inflammatory condition and operation has effected a cure. For instance the following: A man, aged fifty-one, markedly jaundiced and greatly emaciated, with enlarged liver and some tenderness was thought to have cancer of the pancreas. He had had chills and some signs of gall-stones but only one slight attack of colic. The urine showed a marked reaction indicating an inflammatory condition. Operation disclosed five calculi lodged in the lower end of the common bile duct and obstructing the pancreatic duct. Their removal and drainage effected a complete cure. Mayo Robson cites a number of other cases in which the clinical symptoms pointed to malignant disease but in which a well-marked pancreatic reaction pointing to an inflammatory condition was found in the urine. Operation in each case showed calculus obstructing the common duct and pressing upon the pancreas. However, it must not be forgotten that malignant disease itself may set up an inflammatory condition with an inflammatory reaction in the urine. These cases have led to some modifications in the process which it is hoped will prevent errors in diagnosis.

The test has been found to be positive in two cases of pancreatic cyst, in three cases of acute pancreatitis, in two cases of suppurative catarrh associated with fever and jaundice, in a number of cases of simple catarrhal and interstitial pancreatitis, both with and without gall-stones, in two cases of abscess—confirmed at operation—and in two cases of pancreatic calculi the test proved the presence of interstitial inflammation. The negative tests have been found of equal importance.

The author is of the opinion that while in few cases do the physical signs and symptoms all point to pancreatic disease, yet disturbance of the function of the gland is so closely associated with digestive and metabolic processes, that in no case ought it to be impossible to demonstrate signs which point directly to the seat of the difficulty. To the varying groups of symptoms to which pancreatic disease gives rise Doctor Cammidge and Mr. Mayo Robson have found this test to be a most valuable adjunct, and while they do not claim that its presence is pathognomonic yet their experience and observations have led them to believe that taken with other signs it is of the greatest value in diagnosis.

Fat Necrosis.—By this is meant a disintegration of the fatty tissues in the neighborhood of the pancreas or throughout the peritoneal cavity, into glycerine and the fatty acids. These latter remain in the cells in the form of crystals or unite with the calcium salts of the blood-forming yellowish-white patches. It can be readily recognized on opening the abdomen and indicates a grave lesion.

Hemorrhage.—It may occur as extensive effusion into the gland as the result of operation or spontaneously in persons in seeming good health.

PANCREATIC HEMORRHAGE.

Causes.—(1) Vascular disease, such as atheroma and fatty degeneration, or alcoholic or syphilitic arteries. (2) Injury. (3) Fatty degeneration of the gland cells and deposit of fat in the pancreas may lead to lack of support of the blood-vessels which are no longer able to withstand the blood pressure. (4) Fat necrosis in the gland or its vicinity. (5) Disintegration of neoplasms, such as cancer or sarcoma. (6) Hemorrhage from embolism of a pancreatic artery. (7) Heart disease, lung disease, cirrhosis of liver, hemorrhagic diathesis, scurvy, purpura, exanthemata, phosphorus poisoning, et cetera. (8) Pancreatitis.

Symptoms.—These may take the form of colicky pain, in the epigastrium or of violent pain followed by collapse and death. It may be referred to the precordium or to the back and is usually accompanied by vomiting. The abdomen is distended and tympanitic and if peritonitis occur a rise in temperature will follow; or in very acute cases the temperature may be subnormal.

Robson does not sum up his conclusions at the close of his paper. The most important points he endeavors to bring out, however, are the following:

(1) The pancreas can be palpated often in normal, and almost invariably in diseased conditions. This requires some skill, thin abdominal walls and relaxed recti. (In other words, one can feel the pancreas if he knows how.)

(2) Fat occurs in the stools in practically all cases of disease of the pancreas, and this can be recognized with practically little difficulty.

(3) Undigested muscle fiber is present in nearly all cases.

(4) Emaciation which may reach an extreme degree is of frequent occurrence in disturbance of the functions of the pancreas.

(5) Nausea and vomiting occur in some but not in all cases of pancreatic disease.

(6) Dyspepsia and loss of appetite are constantly present in disease of the pancreas.

(7) Necrosis of the fatty tissue in the neighborhood of the pancreas and at times of the fat in the peritoneum is of frequent occurrence. It is detected at operation.

(8) The occurrence of the pancreatic reaction in the urine is one of the most valuable signs of disturbance of the functions of the gland, and this the author has proved very frequently by exploration.

L. T. R.

* * *

THE CHEMISTRY OF THE URINE IN DISEASES OF THE PANCREAS.

Cammidge, in his paper delivered before the Royal College of Surgeons of England on March 14, 1904, and published in *The Lancet* of March 19, 1904, considers somewhat minutely the chemistry of the urine in diseases of the pancreas.

In 1889 von Mering and Minkowski demonstrated the relationship of the pancreas to diabetes. Since then the part it takes in digestion and the means through which it controls assimilation of carbohydrates has been worked out by such men as Laguese, Schulz, Opie and others.

Formerly the pancreas was considered as an accessory to the digestive tract. Now it is regarded as an organ having a most important influence on *body metabolism.*

When the flow of pancreatic juice into the duodenum is interfered with, no serious disturbance of digestion necessarily follows (its work may be done by other agencies), but with the internal secretion of the gland it is different. *No other organ* is capable of supplying the place the pancreas does in controlling carbohydrate metabolism.

Disease of the pancreas is rarely recognized in life. The difficulty in diagnosis arises chiefly from the obscurity and indefiniteness of the symptoms and the fact that they are masked by evidence of greater disturbance in neighboring organs.

Symptoms of cancer of pancreas are closely simulated by those of chronic pancreatitis and the condition of gland found at operation is so much alike in the two conditions that it is the after-history and response to treatment that allows accurate differentiation. This is a matter of utmost importance, when it is remembered that whereas operation in *cancer* of pancreas is inadvisable and to be avoided, most satisfactory results follow appropriate treatment in chronic inflammation. The difficulty has been to decide which case will benefit by operation and in which will interference hasten a fatal result. To bring these two cases to a working basis P. J. Cammidge (London) and Mr. Mayo Robson began a series of experiments and from the result of their work has arisen the Mayo-Robson Pancreatic Tests—A and B.

REACTION A.

The urine is first freed of sugar and albumin and filtered:

1. Ten cubic centimeters filtered urine in flask add
2. One cubic centimeter strong hydrochloric acid.
3. Funnel in neck flask for condenser.
4. Boil on sand bath ten minutes after first vapor.
5. Add five cubic centimeters filtered urine and five cubic centimeters distilled water.
6. Cool in running water.
7. Neutralize with four grams lead carbonate. Add slowly.
8. Let stand few minutes for complete reaction.
9. Filter through *moist* paper.
10. Wash on filter with five cubic centimeters water.
11. To filtrate add two grams pulverized sodium acetate and 0.75 grams of phenylhydrazin hydrochlorate.
12. Boil three to four minutes on sand bath.
13. Filter into test-tube while hot.
14. Let cool undisturbed.

If in one to twenty-four hours a more or less flocculent yellow precipitate is found, which microscopically shows sheaves and rosettes of *golden* crystals, the reaction is positive. Amount varies with severity of disease. Not absolutely reliable.

REACTION B. DIFFERENTIATION TEST.

The formation of crystals described in A is interfered with in inflammation of pancreas by preliminary treatment of urine with perchloride of mercury, while such treatment does not affect the appearance of the crystals in cases of cancer of pancreas and other conditions which give rise to a positive reaction.

1. Twenty cubic centimeters filtered urine mixed thoroughly with half its bulk of saturated solution of perchloride of mercury.
2. Let stand few minutes.
3. Filter carefully.
4. Ten cubic centimeters filtrate and one cubic centimeter strong hydrochloric acid.
5. Boil ten minutes on sand bath.
6. Dilute with five cubic centimeters filtrate (3) and ten cubic centimeters distilled water.
7. Cool.
8. Neutralize with four grams lead carbonate. Add slowly. Proceed as in Reaction A, beginning with step 8.

If no crystals with A or B pancreas is all right. If crystals with A not B there is active inflammation of pancreas.

Careful study has demonstrated that various forms of inflammation of pancreas depend on alterations in chemistry of the body. Among such are tendency to hemorrhage, apart from presence of jaundice, the occurrence of fat necrosis, occurrence of undigested fat and muscle fiber in stools, sugar in urine, and the marked wasting seen in so many cases. The association of these symptoms in acute cases and the frequent occurrence of several of them in subacute and chronic inflammation suggest that the chemical changes that give rise to them are directly or indirectly dependent on perversion of pancreatic function.

The most characteristic of the signs is *fat necrosis,* which is almost invariably associated with obvious disease of the pancreas. It is now admitted by most authorities, that the masses of free fatty acids and the combination of them with lime, which constitute the lesion are directly derived from the fat of the affected part by the fermentative action of the pancreatic secretion, and that glycerine the other constituent of the fat molecule is absorbed by the circulation. Bearing in mind the effects produced in animals by the subcutaneous injection of glycerine, it seemed probable that in man the continued action of minute doses, such as fat necrosis would give rise to, might produce such a blood state as is met with in pancreatitis, especially when to the action of the glycerine on the blood there are added the effects of the removal of calcium salts from the circulation.

Starting with the theory of a connection between fat necrosis and hemorrhagic tendency, the chemical investigation was begun. They soon realized that the quantity of blood obtainable was inadequate for tests for glycerine. They then turned their attention to the urine, knowing the selective power of the kidneys, by which they detect and excrete abnormal constituents of the blood. They hoped to find that the soluble products of fat necrosis (or their derivatives) might cause changes in the composition of the urine, which owing to the large bulk of material easily available for examination, could then be detected.

It was proven that though glycerine is oxidized and increases the secretion of carbon dioxide, it is still excreted in quantities in the urine. From fifty to sixty per cent of the quantity given by the mouth to dogs is excreted in the urine. Even a larger percentage than this might escape destruction in patients suffering from pancreatic affection, because the metabolic processes are abnormal and there is a tendency to defective oxidation.

Several methods of detecting glycerine were employed. Lewins—depending on the fact that oxalic acid breaks up in presence of glycerine into formic and carbonic acids. Another—depending on the formation of glycerose, when solution of glycerine is heated with nitric acid. In the latter test they employed phenylhydrazin to detect the glycerose and got marked deposit of crystals from pancreatic urines.

Control experiments were carried out on normal urines and specimens from catarrhal and obstructive jaundice, intestinal obstruction, gastric ulcer, et cetera, were found to be uniformly *negative*. The differentiation proved to be less simple than was first thought, because similar results could be obtained in a number of diseases in which there was no reason to suspect pancreatic disease.

After repeated examination of normal known and suspected pancreatic urines and taking into consideration clinical symptoms, the test was found to be of diagnostic value. The strength of acid, the kind of acid, the time of boilng and other details of the experiment, exerted considerable influence on the result, and from these numerous experiments arose the reactions A and B previously mentioned.

As stated the results obtained by A were found not to be absolutely trustworthy, though an aid to diagnosis, because a positive reaction was also obtained from patients suffering from certain diseases where active tissue change was taking place as cancer, adenitis, pneumonia, et cetera. Then reaction B was devised as a result of further study and the combination of the two in the majority of cases makes a trustworthy diagnosis from examination of *urine alone*. The differentiating test depends on the fact that the formation of the crystals described in A is interfered with in inflammation of the pancreas by preliminary treatment of the urine with perchloride of mercury while such treatment does not affect the appearance of crystals in cases of cancer of pancreas and the other conditions which give rise to a positive reaction.

Next the solubility of the crystals in dilute sulphuric acid (one in three) was carefully worked out, proving that the time of solution depended not on the size of the crystals, but upon the degree of the intensity of the inflammatory changes in the gland.

The practical results of the two reactions and the solubility may be summed up as follows:

1. If no crystals are found by either A or B method the pancreas is not at fault and some other explanation of the symptoms must be sought.
2. If crystals are obtained by the A method but not by the B reaction, active inflammation of the pancreas is present and surgical interference is generally indicated.
    - (a) The crystals obtained by the A method will, in acute inflammation, dissolve in 33 per cent sulphuric in about half a minute.
    - (b) In chronic inflammation the crystals obtained by the A method will take one or two minutes to disappear.
3. If crystals are found in preparations made by both the A and B methods there may be:
    - (a) Malignant disease of the pancreas, when the crystals will as a rule take from three to five minutes to dissolve and operation is inadvisable.
    - (b) A damaged pancreas due to past pancreatitis, when the crystals will dissolve in from one to two minutes.
    - (c) Some disease not connected with the pancreas, when the crystals dissolve in about one minute.

In the two latter, b and c, the urgency of the symptoms and the condition of the patient must decide the need for an exploratory incision, but there is generally not much difficulty in referring the case to one or other groups when the clinical history is considered in conjunction with the result of the examination of the urine.

After becoming thoroughly familiar with the test, both reactions can be made in forty-five minutes. They are most conveniently made in the afternoon and examined the following morning. A. M. C.

* * *

Sahli's Test.—This test depends upon the principle of introducing into the gastrointestinal tract some substance that will not be attacked by the gastric juice. Sahli claims that a so-called glutoid capsule which has been hardened by immersion in formaldehyde solution will pass the stomach unaffected by its ferments and will be dissolved by the pancreatic fluid. He fills the capsule with iodoform which may be detected in the urine and saliva after it has been freed from its imprisonment. If the pancreas is not functionating normally no reaction will take place and the capsule may be found in the stool intact. Galli, however, discredits the value of this test by reporting a case in which the pancreas was shown to be completely involved in a carcinomatous growth, and the test was positive.

In all cases of abdominal disease associated with the digestive apparatus careful microscopic and chemical examination of the urine and stools has become our imperative duty. D. M. C.

TRANSACTIONS.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

STATED MEETING, MARCH 6, 1905.

THE PRESIDENT, DANIEL S. DOUGHERTY, M. D., IN THE CHAIR.
REPORTED BY JOSEPH A. ROBERTSON, M. D., SECRETARY.

READING OF PAPERS.

THE RECOGNITION AND DIFFERENTIATION OF RALES.

DOCTOR FREDERICK E. BEAL read the paper of the evening. He said, in part:

"In my opinion, the râles heard in the lung should be divided into but two main divisions, dry and moist, and it is as easily possible to differentiate between a dry and a moist râle as it is to tell the difference between the sound of a piano and that of a violin. It is true that a dry râle may vary in its size from that produced by the largest bronchus to one having its origin in the tiniest bronchiole; while the size of the moist râle may be that of the finest air-vesicle to that of the largest cavity, and the number of râles, each of different size, that could possibly exist between these extremes is almost without limit. Why, then, should we confuse ourselves by picking out two or three of each kind, and giving these the dignity of a name. It is enough to know, and is of the greatest importance, from a diagnostic and prognostic standpoint, that a râle is moist or dry; and this can with certainty be known, while its size, though important, can be told with a moderate degree of accuracy, by its pitch.

"The greatest point of differentiation is that a dry râle has always some duration to it, while a moist râle is always instantaneous. A dry râle is caused by air going at a given rate of speed through a smaller-sized tube than it normally should, thereby raising the pitch of the sound this passage of air produces. The commoner causes of dry râles are mucous stuck so tenaciously on the side of the bronchus that breathing does not move it; this will lessen the calibre of that bronchus. Any pressure from without, or any foreign body or growth within, that would encroach upon the size of the air-passage, and, finally, any nervous phenomenon that would spasmodically cause the bronchi to lessen their calibre, would all give rise to the same condition.

"The moist râle is caused either by the pulling apart of moist adhered surfaces or by air passing through an accumulation of fluid that is sufficiently liquid to allow it to bubble through. This variety may be caused by the breaking apart of the stuck-together surfaces of the finest air-vesicle, or that of the pulling apart of the walls of a collapsible cavity, or the air may break through a collection of thin mucous filling a bronchus; or, again, a cavity may be more or less filled with fluid, and entered below the surface of that fluid by a bronchus. The air entering through the bronchus will bubble up through the liquid, but the sound produced will always be instantaneous.

"The moist râles are of far graver significance than the dry. The dry râles are the whistlings heard, perhaps, in their greatest profusion and purity in bronchitis, emphyema and asthma, while the moist râles are most typical in pneumonia and pulmonary tuberculosis."

DISCUSSION.

Doctor Victor C. Pedersen: I wish to ask where the reader places the friction râle of pleurisy.

Doctor Beal: The dry râle, or the râle with duration always sounds a little at a distance when listening to it, and the moist râle always sounds closer to the ear. The difference between these and the friction râle of pleurisy is that, while the friction râle has duration, it always sounds close to the ear. It is sometimes confounded with the dry râle.

REPORTS OF CASES.

SPECIMEN OF MYOMATOUS UTERUS.

Doctor L. J. Ladinski: I removed this specimen from a woman twenty-eight years of age, with the following history: Patient was married; began to menstruate when thirteen years old. Had two children, both living and healthy, and had had no abortions. Menstruation of late was very profuse, lasting from ten to fourteen days, and so much blood had been lost that the patient had become very pale and anemic. About a year ago she noticed a lump in her right side, which seemed to diminish in size during the menstrual period, and to increase between these periods. Lately the bowels have not moved freely, and cathartics have been resorted to. For the past three months the tumor increased in size very rapidly, until it reached the umbilicus. There was constipation and constant and painful urination. Bimanual examination revealed a large tumor filling the pelvic and abdominal cavities and reaching to the umbilicus; it was immovable, owing to its fixed position on the right side and in front of the pubes, and appeared to compress the bladder. The tumor involved the entire uterus, and was very soft and boggy to the touch, so much so that it could readily be mistaken for a uterus pregnant between the fifth and sixth month. A diagnosis of soft myoma was made and operation advised. Abdominal hysterectomy was done under ether anesthesia two days ago. The ovary and tube of the left side were not removed. On incising the tumor, it was found to contain a large quantity of colloid material, surrounding several small fibromyomata, showing in all probability a myxomatous degeneration. The case is interesting because of the colloid or myxomatous degeneration of the fibroid, a condition which, though not rare, is sufficiently infrequent to warrant reporting, and especially from a diagnostic standpoint. Soft myomata of the uterus are extremely difficult to differentiate from pregnancy, especially when there is amenorrhea, as frequently happens in these cases. In myomata the uterus is uniformly enlarged and presents on palpation a soft, boggy feeling, simulated very closely by that of pregnancy, and when there are a number of small fibroids imbedded in the tumor, as is sometimes the case, they may be mistaken for fetal parts. Careful palpation will show, however, that in pregnancy the uterus is more uniform in contour and that there is also the characteristic feeling of elasticity and fluctuation to distinguish pregnancy from the soft, boggy, almost mushy feeling of a myoma. The speaker knew of no condition which simulated pregnancy so closely, and which was at times so difficult to distinguish from it. The specimen is to be submitted to microscopical examination in order to determine the exact nature of the tumor and the character of the degenerative changes. The patient has run a perfectly normal course up to date, and there is every reason to believe that she will have an uninterrupted convalescence.

DISCUSSION.

Doctor Ferdinand Jeffries: The colloid degeneration never takes place in any tissue other than epithelial, and as the specimen under discussion is a fibroma, I think the colloid degeneration could be excluded. I cannot recall having heard of a single instance of myxomatous degeneration in a fibroma. From the macroscopical picture presented, I am inclined to think that the change was probably edematous. There are two types of fluctuating fibroma, one in which there is merely a necrosis or breaking down of the cellular structure, and the other simple edema, where the interstices are filled with fluid which may even be partly viscous in character. Of course, to make a positive diagnosis, a microscopical examination would be necessary, but my diagnosis, from the gross, is an edematous rather than a colloid or a myxomatous degeneration.

A CASE OF DIAGNOSIS.

Doctor Daniel Sinclair: I wish to present a case for diagnosis of pyoarthritis of a chronic nature. A man, twenty-three years of age, railroad employe by occupation. Patient's mother and father are living. Ten or eleven brothers and sisters died in infancy—cause unknown. Family history negative to tuberculosis. Six years ago he had an attack of gonorrhea, for which he was treated, and he says was apparently cured. About a year later there was a recurrence of the discharge, lasting about three weeks, their being no apparent cause for this attack. Attacks have been frequent since that time, without the patient having exposed himself to them, all showing an uncured condition since 1899. Fifteen months ago he developed a swelling of the left elbow. He then noticed a pain in the right knee, and then in the left hip. Three months later this left elbow opened spontaneously and pus escaped. He stated that during all the time the left elbow was swelling he felt absolutely no pain. At about this time the left index finger, second joint, and the middle finger, at the third or distal joint, swelled, and later the same condition of swelling obtained in the joints of the great and second toes, all rupturing and discharging pus. The patient entered the hospital January 5, with an acute epididymitis on the left side. This inflammation was accompanied by pain. Hot flaxseed poultices were applied every hour until fluctuation was felt. The abscess was opened under ether and a foul, cheese-like substance was taken away, which had destroyed the epididymis completely. When he entered the hospital, the patient had a large abscess on the right side, extending from just below the margin of the nipple downward six or seven inches, and about three and one-half inches wide, burrowing posteriorly to the ribs. This was punctured with a hypodermic needle, and the material evacuated was examined by Professor Jeffries, together with the discharge from the urethra and prostate gland, but no evidences of the gonococcus or tubercle bacillus were found. About ten days ago another fluctuating tumor began to develop on the right hand, about one-half an inch posterior to the first joint, of the little finger. The patient has suffered no pain from any of these lesions. The treatment has been oil of gaultheria locally applied and given internally, without benefit; iodide of potash has also been given internally without, however, reducing any of the swellings. The joint lesions are still swollen and discharge a greenish material, the abscess on the chest wall has not yet closed, and the chronic urethritis is still present.

DISCUSSION.

Doctor Frederick C. Keller: From the history and general appearance of the patient, I am inclined to think the lesions of tubercular origin. I have seen several cases of tubercular arthritis, and this case has many features in common with them.

Doctor Victor C. Pedersen: I have seen two or three cases of gonorrheal arthritis, but the patients all suffered severe pain, and there was no destruction of bone, but some destruction of the joint tissue. I have read of one case of gonorrheal infection where the patient died and pure gonococci were removed from the fluid in the pericardium and in the pleura after death. The patient under discussion presents some general appearance of gonorrheal arthritis, but the slow onset of the joint symptoms, their comparative mildness, their wide distribution and the tuberculous temperature and sinus formation, and the difficulty in obtaining any pathological findings from the fluid in the joints all seem to point to tuberculosis.

Doctor Alexander Lyle: I think the condition tuberculous. The destructive process in the joints, together with the lack of gonococci in the discharge seem to prove rather conclusively that it is of a tuberculous nature.

Doctor Jeffries: I have examined the fluid on two occasions, and, finally, the fluid from the cavity of the chest and have been unable to find gonococci of any sort, by examination or culture. I can only assume that the condition is tubercular, because, in the absence of any demonstrable form of germ in pus we can only come to this conclusion, although the pus does not necessarily contain tubercle bacilli. If the walls of the abscess were scraped, some tubercle bacilli might be obtained, or the histological structures of tuberculosis might be demonstrated. The bacilli, by the time they have become part of the pus, have so far undergone disintegral changes that they fail to accept the dyes, and thus there is pus without any demonstrable bacilli.

DOCTOR M. FRANKLIN: I have examined the patient with the flouroscope, and the appearance of the bones is unquestionably tubercular. The flouroscope, however, unaided by the *x*-ray photograph, is far from reliable.

DOCTOR JAMES PEDERSEN: Possibly the patient has had a more or less pure gonococcal arthritis of the elbow-joint; but in my opinion the sinus formation about the finger joints and in the testicle are significant of a tuberculous process there. I have never seen a gonococcal infection of joints behave just as these finger-joints are behaving, and the history of the case, together with the clinical picture, the pathologic findings, and the flouroscopic picture, as already stated, seem conclusive.

DOCTOR MAURICE PACKARD: The joints of the patient's fingers remind me of the picture of spinaventosa, which occurs in specific and tubercular patients. A positive diagnosis might be made by injecting some of the fluid from the patient's abscess into a guinea-pig.

DOCTOR LESTER L. ROOS said that the apex of the right lung showed some fine râles and a slight dullness, which was indicative of tuberculosis.

PATIENT SUFFERING FROM FACIAL PARALYSIS.

DOCTOR GEORGE B. MCAULIFFE: I wish to present a patient who, during the course of an acute otitis media, developed facial paralysis. When this occurs as the result of the otitis, it is due to the pressure of an exudate on the nerve exposed by reason of a bony dehiscence or due to a neuritis established by inflammatory extension through the small foramina in the facial canal. The case was referred to Doctor Franklin for electrical treatement.

FIBROMA OF INSIDE CHEEK.

DOCTOR MCAULIFFE: I also wish to show a patient with a small fibroma inside of the cheek, which has existed for twenty years, and which got so continually between the teeth that the woman has developed the habit of speaking with the jaws almost set. The wonder is that she endured it so long.

EPITHELIOMA OF THE LOWER LIP.

DOCTOR JOHN A. BODINE: I wish to show a case of epithelioma of the lower lip on which I have operated. The patient had been treated for three months under the *x*-rays, with a resultant increase in size of the growth. He first appeared at the clinic with a foul, fungus mass, which involved the lower lip from the angle to within a third of an inch of the other angle, and extended downward over the chin. The raw surface was closed by plastic flaps. I never put a dressing on a face wound. I have removed upper and lower jaws, and lower lips and closed harelips, and have never applied any gause dressing, and yet never had any suppuration. The reason for not applying a dressing is that if it be under the eye, the dressing becomes saturated with tears; and if below the nostrils, the nasal secretion will infect the wound, or below the mouth the saliva will be retained and decomposed in the gauze, thus infecting a wound that would otherwise heal. In the operation under discussion, every single gland and every bit of loose areolar tissue was dissected down to the clavicle and both submaxillary glands were removed, care being taken not to sever the facial artery, as the life of the flaps depends upon the integrity of this artery.

DOCTOR M. FRANKLIN: I have never known of an epithelioma of the lower lip being cured by exposure to *x*-rays, and do not believe that it can be done. I think that now, however, is the time to subject this patient to *x*-ray treatment, and believe that about fifteen radiations would materially lessen the chances of recurrence.

DOCTOR DANIEL S. DOUGHERTY: I would like to send my mastoid patients around with a very light dressing, and am much impressed with Doctor Bodine's idea of getting patients with face wounds out of bed in a short time. I always get my mastoid patients up, if possible, on the second day, and even allow them to leave the hospital two or three days after operation.

POTTS' DISEASE OF THE DORSAL SPINE.

DOCTOR VICTOR C. PEDERSEN: I desire to present this patient, three months after operation, in order to illustrate the importance of stripping a patient for physical examination. The abscess in the case pointed at the tip of the left twelfth rib, where a small incision had been made before the case came into my hands. No examination of the back had been made, so that the kyphosis present in the middorsal region escaped attention. At first the cavity drained freely, but under the persistent use of ten per cent iodoform in glycerine emulsion, all discharge had ceased. With the aid of orthopedic corsets, prescribed by Doctor Homer Gibney, further progress of the disease appeared to have been arrested. The usual systemic treatment for tuberculosis was also being followed. Doctor Pedersen stated that he hoped to have the boy leave the city, and take up farming as his life's work.

PERIURETHRAL ABSCESS.

DOCTOR PEDERSEN: I also wish to present two cases of periurethral abscess. The first patient developed complications before any treatment of the disease was had, in the midpenile region. I adopted the plan of treatment which I think is best in these cases, not only opening the abscess throughout its entire length in the long axis of the penis, but also of slitting the skin somewhat in addition, thus producing a large cone-shaped cavity, with its apex at the urethra, and its base in the skin sheath of the penis, thus facilitating packing from the bottom. In this case the entire cavity was closed in three weeks. At no time previous to or subsequent to the operation was there a communication between the abscess and the urethra. The expectant method of treating the gonorrhea had resulted in a perfectly healed urethra in the course of twelve weeks' treatment, which included the surgical care of the abscess.

The second case was one of periurethral abscess in the glans penis, which appeared during the course of gonorrhea, but without material symptoms. When first seen by me, the gonorrhea was cured, with the exception of a few shreds in the first urine passed. The abscess was about the size of a pea, and entirely without subjective symptoms. Pressure did not show any connection with the cavity of the urethra. A hypodermatic needle was passed into the abscess and I withdrew a few drops of mucus, which, unfortunately, were lost in the dispensary before examination for gonococci could be made. Since that time the hypodermatic needle hole in the wall of the abscess has remained open, but no material discharge which the patient noticed was coming away, and no urine escaped. As to treatment, I think that the proper method is to open the region about the abscess as far as the floor of the urethra, and tie off the neck of the abscess at this point, and then dissect out the wall, allowing the wound to heal by granulation. I think this method would result in complete and steady cure. The case is presented as showing how an abscess in the fossa navicularis could develop with few symptoms, subjective or objective.

DISCUSSION.

Doctor James Pedersen: I have never seen an exact duplicate of the second case presented, that of abscess in the glans near the frenum. Abscesses in that locality are much more frequent on one side or the other of the frenum. If the abscess in question were opened too freely, I think there would be risk of a sinus through which urine would leak, and which would be difficult to close because of the scant amount of tissue with which to do a plastic operation. The glans penis does not lend itself well to plastic work. I think the abscess might be punctured with a very slender bistoury, from within the meatus.

The second case, that of the periurethral abscess near the penoscrotal angle, I think has been very skillfully treated. A maneuver I have seen practised in these cases consists in making the usual free incision in the skin, over the prominence of the tumor, but in incising the abscess cavity either above or below the center, so that, in case the floor of the urethra sloughed at the site of the abscess, the resulting sinus would have an oblique direction, and could therefore be the more easily closed, with or without a plastic operation.

Doctor Daniel A. Sinclair: In cases of periurethral abscess, I always try to have the discharge into the urethra, rather than external, even though the skin be slightly yellowish, showing that the abscess wall is about to burst, because by incision into the urethra, danger of fistula is removed. The incision is made by passing an endoscopic tube into the urethra, making a free incision into the abscess, and then using a twenty-five per cent solution of peroxide of hydrogen once a day, through the urethral opening. When the abscess bursts externally, and a fistulous tract results, the sinus is closed by dissecting around it, from the skin surface to the urethra and tying a ligature around it, just below the mucous membrane, with the result of nearly always closing it.

Doctor Alexander Lyle: I do not think anything is accomplished by the iodoform drain. I have been using recently a solution of iodin, and irrigating with it from below the sinus, and in one case, particularly, have obtained very good results after five irrigations of five per cent iodin. A tuberculous abscess was opened at the clinic, and three pints of pus removed, and it was curetted and washed out with iodin once a week for five weeks, with excellent results.

Doctor John A. Bodine: I would have known Doctor Pedersen was a general surgeon by the scar of the periurethral abscess case. He advocated draining these abscesses externally, rather than into the urethra, as the latter process does not follow the rule of general surgery of dependent drainage.

Doctor Victor C. Pedersen: In answer to a query from Doctor James Pedersen, I would say that the little pocket of pus is situated well in front of the frenum in the glans penis proper. This came during an attack of gonorrhea, but without symptoms of pain, and I thought it some congenital condition, which had developed later. I believe a rather free opening and tying off the same at the floor of the urethra the correct one, and also agree with Doctor Bodine that an abscess containing pus, whether prostatic or urethral, should be dealt with on surgical principles. An ischiorectal abscess is not drained from the canal of the rectum, but from a skin opening liberal enough to guarantee drainage from the very bottom. After opening the abscess to its utmost limitations, extra cuts should be put in the skin, so that the skin will not heal first. I have tried the iodin irrigations on other patients, with very good results. Lugol's solution of iodin, I think, is better than the simple solution, as the former prevents the precipitation of the iodin and enables it to work its way through the sinuses.

ORIGINAL ABSTRACTS.

SURGERY.

By FRANK BANGHART WALKER, Ph. B., M. D., Detroit, Michigan.
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ON THE STERILIZATION OF CUTTING INSTRUMENTS.

It goes without saying that most modern methods of sterilization greatly impair the sharp edge of cutting instruments. One who formerly included his knives and scissors with all the other instruments in the boiling process for an hour and found them dull afterward naturally concluded that somehow contact with each other caused the trouble. Wrapping them with cotton or separate sterilization then seemed to offer satisfaction, but these precautions also failed. A shorter immersion in the boiling water or even in some antiseptic solutions, such as carbolic acid have not invariably given relief from the injurious effects and the subject of the sterilization of cutting instruments may yet be considered a fit one for discussion. H. A. Royster has given this matter some attention and in the *Annals of Gynecology and Pediatry,* Number II, Volume XVIII, has stated the results of some correspondence among a number of operators concerning this subject. He has found that a large proportion of surgeons are abandoning the sterilization of knives by boiling, and that each year they are doing less and less to their cutting instruments. He states: "The fact that twenty-nine surgeons out of fifty-one do not boil their knives at all is an indication that other methods have been found reliable." That might be called clinical proof. The writer has also obtained some experimental proof. After subjecting four knives to four different processes he found upon microscopic examination with a low power that least damage was done to the instrument immersed for ten minutes in alcohol. Next came the one placed in five per cent carbolic followed by alcohol sponging, then the pure carbolic acid, and, finally, the one which was boiled exhibited the greatest impairment of its edge—irregular notches and a loss of polish. His conclusions are:

(1) Knives can be safely sterilized by chemical and mechanical means without the use of heat in any form.

(2) The majority of American surgeons are using carbolic acid, or alcohol, or both.

(3) Immersion in ninety-five per cent alcohol has the least, and boiling the most effect in dulling the edge of a knife.

SECONDARY ABDOMINAL OPERATIONS—REMOTE.

Cushing has in the March (1905) number of *Annals of Gynecology and Pediatry,* tabulated the commonest reasons for remote secondary abdominal operations as follows:

Adhesions: Pain; compression of intestine; compression of ureter.

Sinus and purulent collections.

Fistulæ: Fecal, urinary, biliary.

Herniæ in site of cicatrix.

Uterine troubles after ablation of appendages: Chronic inflammation, retrodisplacement and fixation; hemorrhages.

Finishing of incomplete operations: Removal of portions of appendix, removal of portions of gall-stones, removal of portions of uterine appendages; recurrence of malignant disease.

GYNECOLOGY.

By REUBEN PETERSON, A. B., M. D., Ann Arbor, Michigan.
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AND
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A CONSIDERATION OF FIBROID TUMORS OF THE UTERUS, BASED UPON A STUDY OF A SERIES OF TWO HUNDRED TEN CASES, TREATED SURGICALLY.

Doctor John C. Webster, of Chicago, (*American Medicine*, March 11, 1905), records his results from two hundred ten cases of uterine fibroid treated by surgical procedures. In these two hundred ten cases the following methods were used: Vaginal hysterectomy, 36; abdominal panhysterectomy, 46; abdominal supravaginal hysterectomy, 48; vaginal myomectomy, 3; abdominal myomectomy, 45; removal of tubes and ovaries, 2; vaginal ligation of the uterine arteries, 3; removal of submucous growths, 27.

The mortality was two and thirty-eight one-hundredths per cent, one death being due to pneumonia, three to sepsis, and one to shock. The tumors were of all the well-known varieties; submucous, eight per cent, interstitial, twenty per cent, subperitoneal, fifteen per cent, and a combination of these varieties, fifty-seven per cent.

The degenerations found were as follows: Calcareous, 2; edematous, 6; cystic, 13; myxomatous, 4; suppurating, 10; adenocarcinoma of the cervix, 1; sarcoma, 2; hemorrhagic, 3; necrobiosis, 11; in all 52.

The tumors were complicated by several kinds of pelvic disease, the most frequent complication being inflammation of the appendages. Prolapsus, retroversion, ovarian cysts, hernia, appendicitis and pregnancy were also found. At least one form of these complications was found in one hundred sixty-four cases.

Pressure symptoms from the growth of the tumor were found in a considerable percentage of the cases. Cardovascular symptoms were found in twenty-five per cent.

In recent years surgical methods have gradually displaced all other methods of treatment. The custom of advising the patient to wait until the menopause comes, with hope of relief at that time, has been responsible for much unnecessary morbidity and premature death.

All large or growing tumors, or small ones which cause troublesome or serious symptoms, should be treated surgically. Fibroids should not be allowed to reach a large size because degeneration is apt to occur in the heart, liver, and kidneys. Ligation of the uterine arteries has scarcely any place in the treatment of fibroid tumors. Tait's operation of removing the uterine appendages has largely been abandoned in America. Myomectomy is suitable to the majority of pedunculated submucous fibroids. Its applicability to subperitoneal and interstitial growths has also been clearly demonstrated. Myomectomy is not advisable in a visible or palpable abdominal swelling composed of many small or medium-sized tumors. Age is a factor which must be considered in choosing the method of operation. A woman's desire to become pregnant may influence an operator to perform myomectomy instead of supravaginal hysterectomy. Myomectomy involving a communication between the peritoneal and uterine cavities should never be done. It is rarely indicated when the tumor is complicated by adnexal disease so severe as to warrant the removal of both tubes and ovaries. Cervical and pedunculated submucous fibroids should be removed through the vagina. The majority of subperitoneal or interstitial tumors should be removed by the abdominal route. Supravaginal amputation is the preferable method in abdominal hysterectomy, except in cases where malignancy is known or suspected. Morcellement is never admissible if the fibroid is associated with malignancy. C. L. P.

OBSTETRICS.

By WILLIAM HORACE MORLEY, Ph. B., M. D., Ann Arbor, Michigan.
ASSISTANT IN OBSTETRICS AND GYNECOLOGY IN THE UNIVERSITY OF MICHIGAN; VOLUNTÄR-ASSISTENT IN DER UNIVERSITÄTS-FRAUENKLINIK ZU HEIDELBERG.
AND
CHRISTOPHER GREGG PARNALL, A. B., M. D., Ann Arbor, Michigan.
ASSISTANT IN OBSTETRICS AND GYNECOLOGY IN THE UNIVERSITY OF MICHIGAN.

THE MALIGNANCY AND SPONTANEOUS HEALING OF CHORIO-EPITHELIOMA.

Hörman (*Beit. zur. Geburts. und Gyn.*, Band XIII, Heft 3) has an interesting paper on this subject. He has in one case, once five and a half months and a second time seven and a half months after an abortion, removed particles of the tumor from the uterus with the curette. The tumor cells had penetrated everywhere in masses, even into the uterine muscle, bringing about its destruction. There were also found typical vaginal metastases with unlimited cell proliferation in the vicinity.

The characteristic clinical picture of hemorrhage, enlargement of uterus, progressive anemia, chills and fever was present. In spite of all these, the patient made a good recovery. Six months later she had her regular menses, and within a year she conceived and bore a perfectly healthy child.

From this case and from others reported in the literature, Hörman concludes that the absolute diagnosis of malignancy of chorio-epithelioma can only be made from the subsequent history of the case. Histological and clinical indications do not permit one to make with any degree of certainty a definite prognosis in any single case.

Morley.

PEDIATRICS.

BY ARTHUR DAVID HOLMES, M. D., C. M., DETROIT, MICHIGAN.

TUBERCULOSIS IN CHILDREN.

ROBERT H. BABCOCK (*Pediatrics*, September, 1904) emphasizes a few facts to be remembered by physicians in passing upon the condition of a child's lungs. Tuberculosis is of frequent occurrence in children under ten years. According to statistics, out of 2,447 autopsies 362 instances of tuberculosis, or 22.93 per cent, were found. Other investigators find about the same per cent. It may be stated in a general way that in young children the seat of tubercle is in the bones, joints and lymph nodes, and that the lungs eventually become affected secondarily in almost every instance. In infants the disease manifests itself by symptoms mostly resembling marasmus. The bronchial glands are the chief (and according to Fraenkel) the earliest seat of the affection, and from here the disease spreads to the middle and lower lobe of lung. Accordingly, when pulmonary tuberculosis is suspected in a child of tender years, it is not the apex to which attention is to be especially addressed, but the bronchial gland area situated at the back between the second and fifth dorsal spines, the middle lobe on the right side, the middle portion of the left lung, and both lower lobes. Investigation of the lymph glands particularly the cervical and mediastinal is of the utmost importance. Another consideration of great clinical significance is the liability of young children to miliary tuberculosis, in which cases the pulmonary signs are very apt to be those of general bronchitis with obscure areas of bronchopneumonia, as the lungs are not the organs primarily affected. When they do present signs of tubercular disease, it may be regarded as a comparatively late manifestation of the tuberculosis.

ORTHOPEDICS

BY IRA DEAN LOREE, M. D., ANN ARBOR, MICHIGAN.
FIRST ASSISTANT IN SURGERY IN THE UNIVERSITY OF MICHIGAN.

A SIMPLE AND RAPID METHOD OF RECORDING THE LATERAL DEVIATION OF THE SPINOUS PROCESSES IN SCOLIOSIS.

ALBERT H. FREIBERG, M. D., of Cincinnati (*American Journal of Orthopedic Surgery* for January, 1905). Photography used for this purpose he regards of much benefit in gaining the best possible idea of the appearance of the figure but very deficient in exact measurements and convenience. If the thread screen is used it must be large, to show difference of one-eighth inch. The patients and camera must be in the same light. This is difficult, especially with very young children, as only in the best equipped studios can the proper pose be maintained. Much valuable time is lost in the development of the print.

His method is accurate, simple, rapid and convenient. A piece of plate glass one-quarter inch thick, six inches wide, and twenty inches long has a line drawn through the middle of its length. The plate is placed against the back so that the line cuts the vertebræ prominens at its upper end and the fold of the nates below, the line of the spinous processes having been first traced upon the back. The curve is then quickly drawn upon the plate. The plate is then laid upon a board of the same dimensions upon which he has pasted a piece of cross-section paper, which is divided into squares of inches and eighths and down the middle of which is a heavy line to correspond with the one upon the glass. The glass is superimposed upon the paper and the curve copied upon it. I. D. L.

OTOLOGY.

By R. BISHOP CANFIELD, A. B., M. D., ANN ARBOR, MICHIGAN.
CLINICAL PROFESSOR OF OTOLOGY, RHINOLOGY AND LARYNGOLOGY IN THE UNIVERSITY OF MICHIGAN.

OTITIS MEDIA IN CHILDREN.

ABRAHAM JACOBI, M. D. (*Archives of Otology*, Volume XXXIV, Number II) says that otitis media cannot be divided into bona fide otitis and concomitant otitis, the latter being applied to that form seen in atrophic and emaciated infants, for all cases present the same general symptoms with the same variations found in other conditions. He says otitis media is very often latent, and Gippert found a latent otitis in seventy-five per cent of the inmates of the children's hospitals he examined. Many of the children who were excluded from school on account of incompetency were found to have otitis.

Pyogenous microbes enter the middle ear mainly from the nasopharynx which normally contains numerous microbes—micrococcus pyogenes albus in from eighty-six per cent to ninety per cent and bacillus pseudodiphtheriæ in ninety-eight per cent of all cases. In nasal catarrh there is a relative increase of the bacillus pneumoniæ of Fraenkel and Friedlaender, of streptococci and bacillus of diphtheria. Infection may enter the middle ear by contiguity of mucous membrane or be thrown in during coughing, vomiting, or sneezing, especially when there is a catarrhal condition of the nares or marked deviation of the septum. Another common cause of otitis is nasopharyngeal diphtheria. The membrane may close the Eustachian orifice or may extend into the tubes.

Probably the most frequent cause of otitis in children is scarlet fever with its coccic or bacillary throat affections. There may be perforation of the membrane, necrosis of the ossicles and the process may extend to the antrum and mastoid cells, the sinuses and meninges, with the results of pyemia, brain abscess, or septicemia.

All the varieties of nasal, pharyngeal and nasopharyngeal catarrh, adenoid vegetations and hypertrophied tonsils are frequent causes or accompaniments of otitis media. Doctor Jacobi says uncomplicated hypertrophied tonsils as a cause of otitis is much overestimated as the tonsils surrounded with a firm capsule are much less apt to admit of the absorption of infection and toxins than the surrounding lymphoids which are in much closer connection with the general lymph circulation.

Primary tuberculosis of the middle ear is rare. Secondary tuberculosis occurs in four and four-tenths per cent of the chronic purulent otitis, most of these in children who have granular or bone tuberculosis.

In cerebrospinal meningitis the ear is often affected and the infection often extends to the internal ear. Inflammations of the inner ear are rare, only two cases in Preysing's one hundred ninety-seven cases. Perhaps the majority depends upon cerebrospinal meningitis. Menier's symptoms are not often observed. They will always get worse after quinin and salicylic acid. Perforation is not as frequent as might be expected, nine cases in Preysing's one hundred fifty-four. This infrequency is believed to be due to the greater resistance of the membrane in the young. In the young the Eustachian is shorter but wider both at the isthmus and at the tympanic orifice and the direction of the canal is almost horizontal.

Prevention—Nasal and postnasal catarrh should be treated before they do harm, adenoids should be removed, enlarged tonsils resected and hypertrophy of the nasal mucous membrane attended to. After every operation in these parts cleanliness must be enforced, one or two daily saline irrigations made from a nasal cup will suffice.

Treatment—Patient should be kept in bed, a mild antipyretic and purgative will often ameliorate the symptoms. For severe pain a few drops of cocain solution may be dropped into the ear, occasionally a leach may be applied over the mastoid process, with hot fomentations. Free paracentesis may be performed if pain and bulging are present. The ear should not be syringed. Borax may be insufflated. Treat the nasal conditions.

LARYNGOLOGY.

By WILLIS SIDNEY ANDERSON, M. D., Detroit, Michigan.
ASSISTANT TO THE CHAIR OF LARYNGOLOGY IN THE DETROIT COLLEGE OF MEDICINE.

A PECULIAR FORM OF CHRONIC HYPERPLASIA OF THE MUCOUS MEMBRANE OF THE UPPER RESPIRATORY TRACT.

Sir Felix Semon (*London Lancet,* February 25, 1905) describes several cases of a peculiar hyperplasia of the mucous membrane. It may involve the uvula, soft palate, posterior wall of the pharynx, epiglottis and larynx. The mucous membrane is uniformly thickened and presents a peculiar yellowish shiny, somewhat gelatinous-looking appearance, which reminds one of the aspect of a lardaceous kidney. The surface is smooth to sight and touch, the arytenoid cartilages are freely movable, but the soft palate seems rather slack, as would be expected from the infiltration. The whole condition can be briefly summarized, from the point of view of its morbid histology, as a chronic hyperplasia of the interstitial tissue of the parts involved, of apparently progressive character, with no tendency towards degeneration, and, so far as can be demonstrated, unassociated with the presence of any specific micro-organism. No constitutional condition was found in any of the cases to account for the peculiar condition.

The cases seem to improve without regard to treatment.

DERMATOLOGY.

By WILLIAM FLEMING BREAKEY, M. D., Ann Arbor, Michigan.
LECTURER ON DERMATOLOGY AND SYPHILOLOGY IN THE UNIVERSITY OF MICHIGAN.

JUSTUS TEST FOR SYPHILIS UNTRUSTWORTHY.

Doctor Leon Fenerstein (*Archiv für Derm. und Syph.*, LXVII, page 363) in an article based on data from Professor Neisser's clinic at Breslau, appears to definitely dispose of the question regarding the practical significance of Justus' test in syphilis. Justus has claimed that in cases of florid syphilis there was a marked sudden fall in the amount of hemoglobin as soon as mercury was administered. The author has carefully compared with all Justus' postulates, and attempted to apply the so-called hemoglobin test in forty-five cases. Thirty-two of these were in the florid stage of syphilis, five showed a distinct fall in the amount of hemoglobin, twenty-six showed little or no variation, and two showed an increase. In six cases with primary lesion the test was negative, two showing a decided rise in hemoglobin. The test was applied to seven nonsyphilitic cases. In five of these there was only a slight or no variation in the amount of hemoglobin. In one of these cases there was an increase, and in one a distinct fall in the amount of hemoglobin. The author concludes, therefore, that there is no characteristic variation in the amount of hemoglobin in Justus' sense, and that any claim of a specific syphilitic reaction cannot be accepted.

FURTHER INOCULATION FROM A CHIMPANZEE INFECTED WITH SYPHILIS.

Lassar (*Derm. Zeitschr.*, Band XI, Heft. 8, page 558) reports result of inoculation of a second chimpanzee from the lesion produced on the first animal (already published). The report does not say what form of lesion was used for the second inoculation, whether one of the primary sores or a secondary lesion. The second ape became affected with typical primary and secondary syphilis in the same way as did the first, but shortly after this it unfortunately died of acute miliary tuberculosis.

NEUROLOGY.

By DAVID INGLIS, M. D., Detroit, Michigan.
PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE DETROIT COLLEGE OF MEDICINE.
AND
IRWIN HOFFMAN NEFF, M. D., Pontiac, Michigan.
ASSISTANT PHYSICIAN AT THE EASTERN MICHIGAN ASYLUM.

THE RELATION OF THE NERVOUS SYSTEM TO VISCERAL AND TROPHIC PHENOMENA.

Joseph Fraenkel (*Medical Record,* April 1, 1905) has an article on "The Relation of the Nervous System to Visceral and Trophic Phenomena." The author alludes to the pessimistic attitude which has crept into neurologic science, ascribing it to a phase of evolution. Attention is then called to the pertinent questions for the neurologist to solve, such as "the relation of the ductless glands to the functions of the body," "the interpretation of the so-called functional conditions," and "the relation of the nervous system to the pathology of the vegetative functions." The latter topic is thoroughly discussed by Fraenkel, and a concise description given of work done by authorities on this line. In conclusion the author says that "a thorough study of the subjects outlined promises us: (1) Greater exactness of localization of organic disease of the nervous system and better interpretation of early symptoms. (2) More rational conception of functional conditions. (3) Clearer therapeutic indications.

The article is a good review of the subject, and outlines a clinical work which is timely, and which is being done by neurologists and psychiatrists, in an attempt to explain some of the problems of neurology and psychiatry. I. H. N.

PATHOLOGY.

By ALDRED SCOTT WARTHIN, Ph. D., M. D., Ann Arbor, Michigan.
PROFESSOR OF PATHOLOGY IN THE UNIVERSITY OF MICHIGAN AND
DIRECTOR OF THE PATHOLOGICAL LABORATORY.

EFFECT OF RÖNTGEN RAYS UPON INTERNAL ORGANS.

Heinecke (*Mittheilungen aus der Grenzgebiete der Medicin und Chirurgie,* 1904) has made a very important contribution to our knowledge of the effects of Röntgen rays upon the body tissues. In spite of the tremendous clinical activity in the therapeutic application of these rays very few experimental researches from the pathological side have been carried out in this field, and our knowledge concerning their action upon the internal organs has been practically *nil.* Many clinicians deny any effect whatsoever upon the internal organs, while others empirically claim therapeutic advantages in the treatment of certain internal conditions by Röntgen irradiation. The remarkable results claimed in the *x*-ray treatment of leukæmia have stimulated investigation as to the nature of the apparent improvement seen during such treament óf this disease. Heinecke has made an experimental study of the effects of Röntgen irradiation upon the lymphoid organs of small animals. All mice exposed longer than five hours died within three to eleven days, the autopsy showing emaciation, intestinal distention, and great diminution in the size of the spleen. Microscopically the spleen and lymph glands showed extensive destruction of lymphocytes both in the follicles and pulp. The giant-cells and polymorphonuclear leucocytes also showed evidences of disintegration. As a result of such destruction of white cells the spleen ultimately showed a great rarefaction of lymphoid cells, and a similar rarefaction of specific cells was noted in the case of the bone-marrow. Numerous phagocytes containing pigment and red blood cells were also found in the spleen and lymph-glands, showing an increase in the amount of hemolysis. After a single exposure of fifteen to thirty minutes the remains of the disintegrated cells were found to have disappeared after twenty-four hours, and a rapid regeneration of lymphoid cells took place. These findings offer an explanation for the great decrease in leucocytes and diminution in the size of the spleen seen in the Röntgen-ray treatment of leukæmia. The rays exert a specific destructive action upon the white cells and their parent cells, and the number of white cells gaining access to the blood-stream is thereby greatly diminished. There is, however, the possibility that an intoxication may result from the products of the disintegrating cells.

EDITORIAL COMMENT.

DOCTOR ARTHUR R. CUSHNY.

The departure of Doctor Cushny, Professor of Pharmacology in the University of Michigan, for a similar chair in the University of London, is an event of more than ordinary importance. The loss falls not only upon the school to which he has given faithful work and added reputation, but also upon the profession of America, to whom, as shown by the wide use of his text-book on pharmacology, he has become a recognized authority.

Arthur Robertson Cushny was born in Morayshire, Scotland, March 6, 1866, the son of a clergyman of the Church of Scotland. He graduated at Aberdeen University in 1886, studied medicine there and took the M. B., C. M. degree in 1889, the M. D. in 1891. From 1889 to 1893 he studied in Berne, Strassburg, and Würzburg, and was assistant to Professor Schmiedeberg in Strassburg when called to the University of Michigan in 1893. He was already known as an investigator, having published researches on chloroform and ether, gelsemium sempervirens and muscarin.

While at the University of Michigan Doctor Cushny published researches steadily, as the appended list shows, with more regard to quality than quantity.

Cushny represents the best type of a university teacher. His training combined the solid groundwork and the general culture of the Scottish educational system, with the keen love for investigation, the ability to recognize and state problems, and the accuracy of research of the German schools. Along with his breadth of view he had the rare wisdom to limit his researches to one or two objects of investigation at a time instead of dissipating his energies in a number of directions. All his contributions to science have been models of wise selection and well executed investigation. In connection with the variety of topics one is struck by the originality and thoroughness of the work. Thoroughness, in fact, is a striking characteristic, and shows itself not only in pharmacologic matters, but in all the contributing sciences. Thus, general and special physiology have been enriched by his researches into the physiology of urinary secretion. His observations on saline cathartics form one of the earliest applications of the newer physical chemistry to pharmacology. His investigations into the irregular pulse antedated those of Wenckebach and were broader, inasmuch as they showed that one could determine whether an irregularity is auricular or ventricular, afterwards elaborated by Hering. Skillful and ingenious in devising apparatus, Cushny used such things always as means to an end.

Personally, Cushny is characterized by a rare combination of natural and unconscious dignity and bonhommie. Like so many educated Scotsmen, he is the best type of cosmopolite, appreciating the good qualities of a strange country and its people, and overlooking the minor differences that so strongly affect the provincial. Like so many of his countrymen, Cushny is a tireless golfer.

The leaving of Doctor Cushny brings up another thought that may well be considered. The loss to the country of the intellectual stimulation of such a man raises the question why he leaves. It is true that he is a Britishman, and that London is a great magnet—*punctum vitæ in vitello orbis.* And yet, if the time ever comes, as we often say it will, when America will be the seat of the greatest medical activity, not even London will be able to take away a man foremost in his science. The fact that he not only goes, but that he goes so easily, throws a light on one of the darkest corners of our educational system. We do not care for the rare man. All that is needed is someone to occupy the rostrum, to dole out the lesson for the day and to see that each student has the modicum of learning the curriculum calls for, by a semiannual examination. The glory of the university, the attraction of students of promise, not merely undergraduates—for any school can get them—but genuine students who shall in time reflect glory on the university—these things are not considered. No fully-equipped laboratory comes to the man like Cushny, under our present system. No hewer of wood and drawer of water can be furnished to lighten his labors. If he gets a willing assistant the latter must spend his time pouring his own hard-earned knowledge into the heads of others, instead of advancing his own knowledge by investigation, by reading, by contemplation and discussion.

With the feeling of regret which must come to all those interested in matters of medical education in this country at the loss of such a teacher, there must be mingled also the hope for the improvement in the near future of the conditions which have made such a loss possible.

ARTICLES BY DOCTOR CUSHNY.

(1) Ueber Chloroform und Aethernarkose. *Zeitschrift für Biologie,* Band XXVIII.
(2) Die Wirksamen Bertandtheile des Gelsemium Sempervirens. *Archiv für exper. Pathol. und Pharmakol.,* Band XXXI.
(3) Ueber die Wirkung des Muscarins auf das Froscherz. *Ibid.*
(4) Digitalis. "Transactions of the Michigan State Medical Society, 1894."
(5) Ueber die Wirkung des Sparteins (With S. A. Matthews). *Archiv für exper. Pathol. und Pharmakol.,* Band XXV.
(6) On the Action of Piperidine and Some of its Compounds. *The Journal of Experimental Medicine,* Volume I.
(7) The Action of Substances of the Digitalis Series on the Circulation in Mammals. *Ibid.,* Volume II.
(8) On Intestinal Cathartics. *American Journal of Physiology,* Volume I.
(9) Ueber das Ricinusgift. *Archiv für exper. Pathol. und Therap.,* Band XLI.
(10) On Periodic Variations in the Contractions of the Mammalian Heart. *The Journal of Physiology,* Volume XXV.
(11) On the Interpretation of Pulse Tracings. *The Journal of Experimental Medicine,* Volume IV.
(12) Ueber Darmresorption und die salinischen Abführmittel (With George B. Wallace). *Archiv für die ges. Physiol.,* Band LXXVII.
(13) On the Action of Caffeine on the Mammalian Heart (With B. K. Van Naten). *Archiv. internat. de Pharmacodynamie et de Therapie,* Volume IX.
(14) On Diuresis and the Permeability of the Renal Cells. *The Journal of Physiology,* Volume XXVII.
(15) On Saline Diuresis. *Ibid.,* XXVIII.
(16) On the Secretion of the Urine and Saline Diuresis. "Vaughan Festschrift."
(17) Atropine and the Hyoscyamines—A Study of the Action of Optical Isomers. *The Journal of Physiology,* Volume XXX.

THE DETROIT POSTGRADUATE SCHOOL OF MEDICINE.

THE fourth announcement of special courses given by the Detroit Postgraduate School of Medicine has appeared in very attractive style. The course has been greatly extended by the addition of a clinical faculty, and several optional courses. Arrangements have been made with Harper Hospital, whereby all the facilities there offered are at the disposal of the school for teaching purposes. The course will extend from May 8 until June 4, a period of four weeks, affording opportunity for laboratory and clinical study. A new feature is offered in the course in Hygiene, that of Public Health. This course will include instruction to health officers, and should prove as profitable as it is unique. The other optional courses include Intubation and Tracheotomy, Operative Surgery, Operative Gynecology, Pathology, Radiography, Diseases of Stomach and Intestines. The regular work includes courses in Mental and Nervous Diseases, Internal Medicine, Genitourinary Surgery, Gynecology and Abdominal Surgery, Ophthalmology and Otology, Diseases of the Nose, Throat and Chest, Diseases of the Stomach, Operative Surgery, Dermatology and Syphilology, Roentgen Rays in Medicine and Surgery, Operative Gynecology and Microscopy. The faculty of the Detroit Postgraduate School of Medicine is made up of the most representative and progressive men in Detroit, and good work should be expected from them.

A COUNCIL ON PHARMACY AND CHEMISTRY.

THIS is the title of a new body created by resolution of the Board of Trustees of the American Medical Association at a recent meeting and subsequently perfected at a conference held in Pittsburg. It is organized as an advisory committee to determine the ethical status of all proprietary preparations, especially those offered for advertisement, and the list approved will be incorporated in a book entitled "New and Nonofficial Remedies." A set of rules has been formulated for the guidance of the Council in passing upon the eligibility of a product to admission into the manual:

RULE 1.—No article* will be admitted unless its active medicinal ingredients and the amounts of such ingredients in a given quantity of the article, be furnished for publication. (Sufficient information should be supplied to permit the Council to verify the statements made regarding the article, and to determine its status from time to time.),

RULE 2.—No chemical compound will be admitted unless information be furnished regarding tests for identity, purity and strength, and, if a synthetic compound, the rational formula.

RULE 3.—No article that is advertised to the public will be admitted; but this rule will not apply to disinfectants, cosmetics, foods and mineral waters, except when advertised in an objectionable manner.

RULE 4.—No article will be admitted whose label, package or circular accompanying the package contains the names of diseases, in the treatment of which the article is indicated. The therapeutic indications, properties and doses may be stated. (This rule does not apply to vaccines and antitoxins nor to advertising in medical journals, nor to literature distributed solely to physicians).

RULE 5.—No article will be admitted or retained about which the manufacturer, or his agents, make false or misleading statements regarding the country of origin, raw material from which made, method of collection or preparation.

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* The term "article" shall mean any drug, chemical or preparation used in the treatment of disease.

RULE 6.—No article will be admitted or retained about whose therapeutic value the manufacturer, or his agents, make unwarranted, exaggerated, or misleading statements.

RULE 7.—Labels on articles containing "heroic" or "poisonous" substances should show the amounts of each of such ingredients in a given quantity of the product.

RULE 8.—Every article should have a name or title indicative of its chemical composition or pharmaceutic character, in addition to its trade name, when such trade name is not sufficiently descriptive.

RULE 9.—If the name of an article is registered, or the label copyrighted, the date of registration should be furnished the Council.

RULE 10.—If the article is patented—either process or product—the number and date of such patent or patents should be furnished. If patented in other countries, the name of each country in which patent is held should be supplied, together with the name under which the article is there registered.

The innovation has been the subject of considerable comment by the medical press, some editors even emphasizing their disapproval by caricature accompaniments, which include as subjects the association journal and its editor. Here is a publication that is owned by the American Medical Association, and consequently its conduct should have accorded with the very essence of ethics since the date of its inception. Now, however, the admission is frankly made that it has been going wrong for the past quarter century, and a spirit of repentance is either fancied or feigned. A manifesto has been issued recently in which is substantially declared an intention to renounce the devil and all his works. Of course, it is too soon to predict the outcome of the movement, although some contemporaries have practically hinted at failure, one editor characterizing the whole affair as "the arrogance of ethics—the spirit of trade-unionism in the American Medical Association." Notwithstanding the fact that it has taken years of effort to bring about a movement in this direction the concensus of editorial opinion would seem to indicate that the resultant code of rules is too exacting in some particulars and too lax in others.

MEDICAL NEWS.

PROFESSORIAL APPOINTMENTS.

DOCTOR LEWELLYS L. BARKER, lately professor of medicine in Rush Medical School, Chicago, has been appointed by the trustees of Johns Hopkins University to succeed Doctor Osler as professor of medicine at that institution. Doctor Barker graduated at the Toronto

Medical School in 1890, and was for a number of years connected with Johns Hopkins before accepting the chair of anatomy at Rush, in which institution he afterward occupied the chair of medicine. The professorship of clinical medicine was awarded to Doctor William S. Thayer, who is a native of Massachusetts and a graduate of Harvard University, A. B., 1884, and M. D., 1889. He was resident physician to Johns Hopkins Hospital from 1891 to 1898; was appointed associate in medicine to Johns Hopkins University in 1895, and promoted to associate professor in 1897. His most important contribution to internal medicine pertains to malarial parasites, a monograph on this subject being the product of Thayer and Hewetson. Barker is thirty-seven years of age and Thayer is forty.

MINOR INTELLIGENCE.

THE medical profession is represented by two physicians in the new French cabinet, Doctor A. E. Gauthier, at the head of public works, and Doctor J. Dubief, minister of commerce.

THE medical faculty of Budapest University has offered three prizes ranging from twenty to sixty dollars for the best papers written in popular style and designed to enlighten the public in regard to the nature and prevention of venereal diseases.

EFFORTS are being exerted to procure sufficient funds to establish a medical school at Singapore. Provided a sum of £7,000 can be collected the government of the Straights Settlements will establish a building and design it for teaching purposes.

THE Indiana legislature has passed an amendment to the medical law of that commonwealth, which provides for the appointment of an osteopath on the State Board of Registration. The efforts of the osteopaths to secure an independent board were defeated.

DURING the first week in March the death rate from plague in India reached the enormous total of 34,000. The large number of deaths is said to be due to the utter lack of knowledge regarding hygiene, and to the superstition which reigns regarding treatment of the disease.

THE senior class of Northwestern University Medical School presented to that institution, on March 24, a memorial tablet to the late Doctor Nathan S. Davis. The slab bears the following inscription: "Good and great, he maketh the earth wholesome." The gift will be placed in Davis Hall.

ITALY'S first Finsen light institute will shortly be opened at Florence. The enterprise owes its existence to the benevolence of the King and Queen of Italy, who have given generous support to the project; to the province of Florence, and to the Italian Antituberculosis League. Many contributions have also been received from private individuals.

ALBANY, New York, is suffering from an epidemic of measles. The disease is not confined to any section of the city but is widespread. Thus far over five hundred cases have been reported, and in the neighboring City of Troy three hundred thirty cases are announced. No deaths have occurred.

A RULE has been adopted by the Jersey City Board of Education to the effect that all teachers in the public schools of that city who are infected with tuberculosis must discontinue pedagogic work. A rule has also become vogue that teachers who are suspected of having the disease must submit to medical examination.

REGULATIONS have been adopted by the Venezuelan government whereby all medicines not favorably passed upon by a board of physicians, to be appointed by the state, shall be excluded from the country. The patent medicine curse had grown to such an extent in Venezuela that this precaution was rendered necessary.

THE City of Berlin was made the legatee of 500,000 marks by the will of the late Professor Baron, of Bonn, with which to establish an orphanage for the care of indigent children. The professor made the condition, however, that no physician be connected with the institution and the bequest was therefore declined by the municipality.

A CURIOUS anomaly is reported from Munich in the case of a man who sought medical aid for a nasal obstruction. On examination a tooth was found firmly implanted in the inferior nasal passage, about an inch from the anterior extremity. The tooth was a supernumerary one and its fellow on the opposite side was situated in the jaw in an oblique position.

DOCTOR CHARLES A. L. REED, of Cincinnati, who has been investigating the prevailing sanitary conditions in the Canal Zone at the Isthmus of Panama, has rendered his report to the Secretary of War. He scathingly denounces the Canal Commission for inefficiency, with the result that all of the members have since been recalled and a new commission appointed.

CEREBROSPINAL meningitis has attained such prevalence in the East and has worked with such disastrous results, that Doctor Darlington, president of the Board of Health, of New York City, has asked that the municipality organize a commission to investigate the disease. The cities which have suffered most severely are New York and Philadelphia, and the disease has also asserted itself in Connecticut and other states, including Michigan.

THE drug house of Frederick Stearns & Company recently commemorated the fiftieth year of its business career by issuing a special number of *The New Idea.* It contains a historical sketch of a prosperous past and considerable other interesting matter pertaining to the various departments of the extensive concern. Stearns' first laboratory was a 12x12 back room equipped with a cook stove, but today the laboratories operated by this firm comprise blocks of buildings.

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ORIGINAL ARTICLES.

MEMOIRS.

THE DIFFERENTIAL DIAGNOSIS AND TREATMENT OF POTT'S DISEASE.*

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POTT'S disease is a destructive disease of one or more of the spinal bones which usually results in deformity. The disease is practically always confined to the vertebral bodies. The etiology is still mainly a matter of theory. A quarter of a century ago the disease was called spinal caries, and little thought was given to the nature of the caries. At a more recent date the caries was believed to be due to tuberculosis in all instances. At the present time we find ourselves shifting back to the more indefinite and broader term, caries, having learned that all the cases presenting the characteristic symptoms of Pott's disease are not tuberculous and that a minute differentiation is not always possible.

The general symptoms of Pott's disease are: There is at first a disinclination to use the spine normally; it is hardly a sense of weakness, and it is positively not soreness, or tenderness or pain. Then comes rigidity from involuntary muscular spasm, more or less positive discomfort with positive pain in many instances, and postural and bony deformity.

The rigidity from involuntary muscular spasm is characteristic, and is the main diagnostic symptom before bony deformity develops. It is quite different from rigidity due to either bony or fibrous anchylosis, or from restricted motion arising later on from structural shortening of the muscles opposite the gibbosity.

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*Read before the MILWAUKEE (Wisconsin) MEDICAL SOCIETY, December 13, 1904

Pain when complained of is a distant, not a local, pain. There is hardly ever any pain in the back; the pain is above, or below, at the sides, or in front of the body. It is at the back of the head, down the arms, in the chest, stomach, belly, sides, or down the legs, depending upon the site of the disease. Pain in the back should always arouse a suspicion that the trouble is not Pott's disease; and tenderness to pressure along the spine does not occur in cases where there is any question as to the diagnosis. Indeed, tenderness to pressure on the spine is not found once in a hundred times at any stage of the disease.

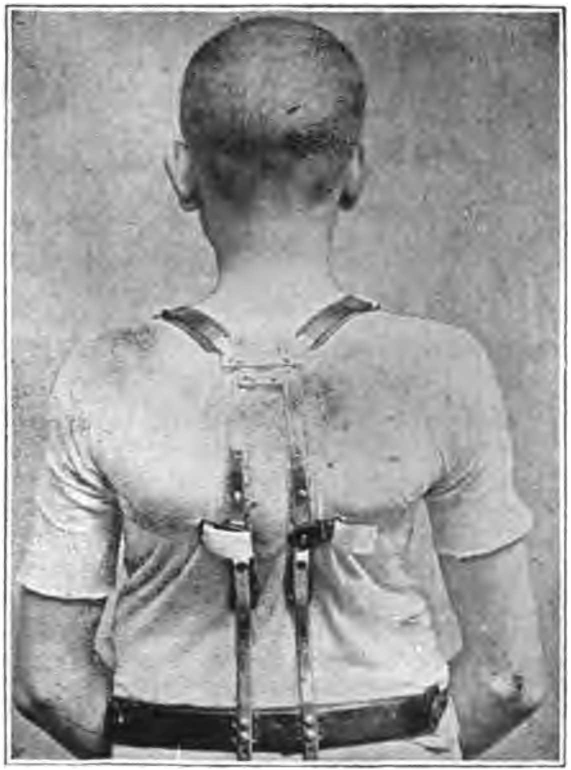

FIGURE I.—Light spine brace for convalescent cases.

In the early stages of the disease the deformity is a postural deformity due to the involuntary muscular spasm in unconscious effort to protect the diseased region from injury. Later on when the caries has advanced to the distruction of the better part of one or more vertebral bodies a real bony deformity, one characteristic of Pott's disease, appears. It is therefore obvious that we must make a diagnosis and arrest the progress of the disease before the appearance of bony deformity if we are to expect a cure without a permanent crippling of the victim. True, one may sometimes wipe out a slight bony deformity and effect a cure without disabling rigidity, but these fortunate children will be much fewer in number than those that develop actual bony

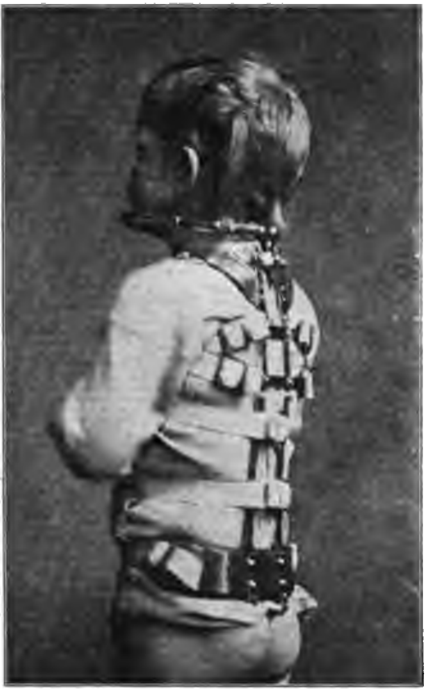

FIGURE II.—Modified Taylor spine brace with chin piece and occipital supports for caries of the cervical vertebræ.

deformity while under treatment and carry the mark all their lives.

To obtain an ideal result in the treatment of a case of Pott's disease one must make the diagnosis before the development of bony deformity, treat the case in recumbency—continuous and absolute recumbency—until cured, and protect the spine by suitable support for some years afterwards.

Other general symptoms are: The patient is easily fatigued; he seeks support by leaning on this or that; in upper dorsal disease there may be grunting respiration; in lower dorsal and upper lumbar disease there may be a transverse abdominal crease. The patient often stands more easily than he sits; he walks carefully, and may waddle or may limp, and squats rather than bends forward when picking up an object from the floor. In perhaps half of the cases there will be a slight elevation of temperature in the afternoon. Abscess appears as a complication in about half of the cases, and paraplegia in a few.

Differential diagnosis: A wrench or sprain of any portion of the spine may stimulate the beginning of Pott's disease, and left untreated may be the beginning of that disease. But in wrench or sprain there is always a positive history of injury, and the symptoms usually clear up rapidly under protective treatment.

Lumbago and sciatica are rare in children, and Pott's disease is not common in adult life. Lumbago and sciatica are practically

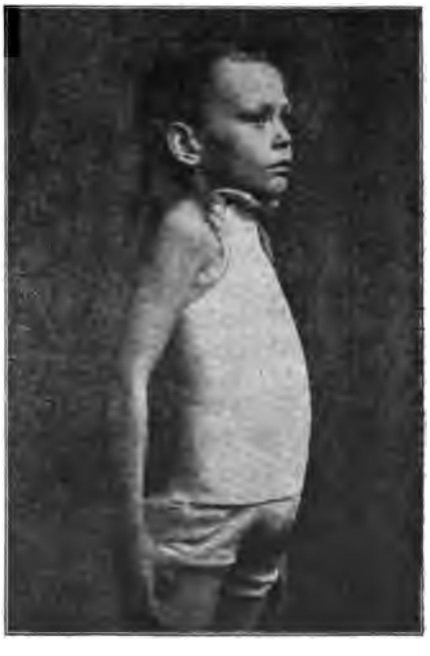

FIGURE III.—High plaster jacket for caries at or above the ninth dorsal vertebra.

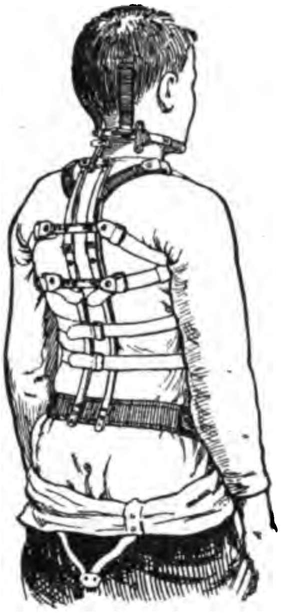

Figure IV. — Modified Taylor spine brace with chin piece for caries at or above the ninth dorsal vertebra.

always found in patients who have, or have had, other rheumatic and gouty manifestations, while tubucular spinal caries is rarely seen in rheumatic and gouty subjects. Lumbago does not give rigidity to gentle passive backward bending of the lumbar spine; Pott's disease gives more or less rigidity to passive bending of the spine in all directions. Pott's disease in the lumbar spine, occurring in an adult, at times closely resembles sciatica. I have notes of a case that was treated for a year by a very competent medical man, and then, after consulting an eminent neurologist and an eminent general surgeon, had a "wet stretching" done to relieve the pain. A careful questioning elicited the fact that the pain was not confined solely to the sciatic distribution, and an examination of the lumbar spine showed a distinct kyphosis and rigidity to passive movement in all directions. In sciatica the patient can usually flex the painful limb to a right angle when standing more easily than he can flex the unaffected member.

The hyperesthetic, or hysterical, or irritable, or neuromemitic spine is a condition of adolescent or adult life. It is usually found in females, or in males who have suffered some real or fancied injury of the spine. There is never an angular deformity, but there may be a rounded gibbosity that closely resembles some Pott's deformities. There is usually marked rigidity, but this is general rather than local. Both rigidity and deformity disappear during sleep and under anesthesia unless they have persisted for years; even then they sometimes disappear. The pain in these cases is always in the spine, and there is none of the characteristic distant pain of Pott's disease. These cases always present local tender spots along the spine; and these sometimes shift during a prolonged examination.

Torticollis may be closely simulated at first glance by disease in the cervical vertebræ. The head may be held bent forwards or backwards, but usually the neck is somewhat twisted and bent laterally to resemble torticollis. In certain disease, motion in all directions is restricted to a greater or less extent, while in torticollis all movements are free except such as put the structurally shortened sternomastoid muscle on the stretch. If the patient be asked to hold his head straight in torticollis the shortened sternomastoid muscle stands out prominently and the chin points away from it. In cervical Pott's disease both muscles often are prominent, and if only one is prominent the chin points towards, and not away from it. This symptom often enables one to make a diagnosis at sight.

The rachitic spine occurs only in children suffering from rickets. It may be the only well-marked symptom of the disease, but this is not usually so; usually there are numerous other rachitis evidences. Of course it may be possible for a rachitic child to have Pott's disease, but I have not seen such a case. The rachitic curvature occupies the lower dorsal, or dorsolumbar region of the spine. The curve is rounded; it is never angular. It may or may not present suspicious rigidity to gentle passive bending. Bilateral contraction of the psoas muscles may be present, but there is never unilateral psoas contraction as is the rule when abscess is threatened in lumbar spondylitis.

The round-shouldered deformity of adolescence and the rounded senile deformity in the same region show no rigidity from involuntary muscular spasm and are never accompanied by pain.

Scoliosis, or true rotary lateral curvature of the spine, is at times difficult to differentiate from Pott's disease presenting postural or structural lateral deformity. It should be remembered that scoliosis is a deformity of crooked growth, and not one due to local bone disease. In the early stages it is not a rigid deformity, and never presents rigidity due to involuntary muscular spasm. Rigidity comes only with structural shortening of muscles and gradual changes in the shape of the bones. In Pott's disease rigidity comes early, and involuntary muscular spasm is usually evident. Patients never suffer pain in scoliosis until after the lapse of many years and the development of enormous deformity. Pott's disease may present a rotary lateral deformity, but scoliosis never presents an angular posterior deformity. Scoliosis rarely appears before the second dentition, and is about twenty times as frequent in girls as in boys. Pott's disease appears about as frequently before as after the second dentition, and fully as frequently in boys as in girls.

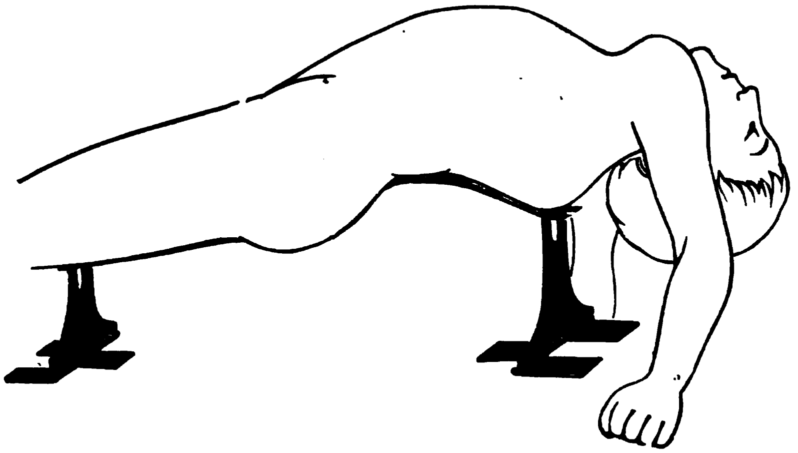

FIGURE V.—Patient on Ridlon's "bridge" for the application of a plaster jacket.

Malignant disease of the spine is fortunately a rare condition. When it does occur it is comparatively late rather than early in life;

while the reverse holds in Pott's disease. In the beginning differentiation is usually impossible. The advance is, however, usually more rapid; pain comes earlier, is more constant, and is not relieved by rest in bed and immobilization of the spine. Thickening of the soft parts in the immediate vicinity of the angular bony deformity is almost conclusive evidence of malignant disease; as is paralysis of one limb or one group of muscles instead of bilateral paraplegia which may complicate Pott's disease. The bladder and rectum are early involved in the paralysis, bedsores appear, and death usually comes in six or eight months.

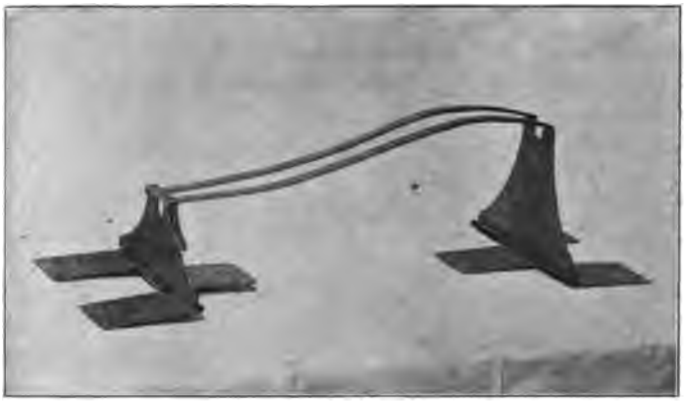

FIGURE VI.—Ridlon's "bridge" for supporting the patient during application of plaster jacket.

The typhoid spine occurs only as a sequella of typhoid fever. It presents no deformity, or at most only a slightly rounded one. The spine, usually the whole of it, is markedly rigid, painful, and sensitive to pressure and passive bending. The onset is sudden, and recovery usually complete within a few months.

Spondylitis deformans, osteitis deformans of the spine, and osteoarthritis of the spine cause a general rounded, not a limited, kyphosis, if any deformity at all is present. There is no reflex, or distant, pain. The onset is gradual, and there is usually abundant evidence in other joints of the general disease. The spine is rigid, but presents no involuntary muscular spasm.

Syphilitic disease of the spine and osteomyelitis of the spine I rarely attempt to differentiate from tuberculous disease, including them under the general name of Pott's disease.

A lipoma, symmetrically placed over the upper dorsal spine was once referred to me as a case of Pott's disease. Only a most superficial examination could have led to this error.

One case of appendicitis has been referred to me with the diagnosis of lumbar Pott's disease. The general condition of the child, the high temperature and the general tense and painful abdomen greatly overshadowed the spinal symptoms.

Infantile cerebral, spastic, paralysis simulates the paraplegia of Pott's disease. Pott's paraplegia rarely occurs in advance of the spinal deformity, and never without spinal rigidity. The cerebral paralysis presents neither spinal deformity, nor rigidity to gentle handling.

Pseudohypertrophic paralysis and progressive muscular atrophy in young children may present the attitude and action of lumbar Pott's disease, and if the examination be hurried and the child somewhat frightened, so that there be voluntary rigidity to passive bending of the spine, one may fall into error at the first examination. A short period of observation, however, will clear the matter up.

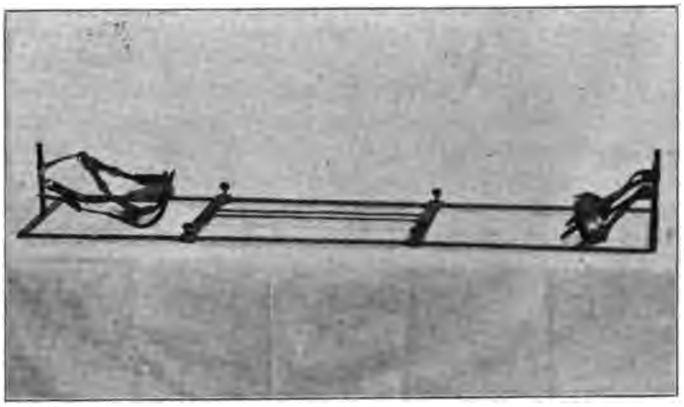

FIGURE VII.—Ridlon's stretching frame for the treatment of cases suffering from Pott's paraplegia.

Sacroiliac disease, before the development of deformity, or of a considerable abscess, closely resembles caries at the fourth and fifth lumbar vertebræ. There may be contraction of the psoas muscle and rigidity of the lumbar spine. Repeated, gentle passive bendings of the lumbar spine after a period of rest in bed may exclude lumbar disease, and sooner or later sacroiliac disease can be made out by palpation of the joint, internally or externally, and by pressing the wings of the iliac bones together.

Hip disease has been the mistaken diagnosis for lumbar spondylitis by men of vast experience in the treatment of children's diseases. A patient who walks with a limp, has flexion deformity at the hip-joint and has rigidity at that joint to sudden and vigorous passive manipulation may be thought to have hip disease. These symptoms, however, may be present in lumbar spondylitis. Only by most gentle testing of the motions of the hip-joint may we make sure that flexion, and rotation during flexion, are normal and thus exclude disease at the hip-joint, and then be left to differentiate between lumbar spondylitis and sacroiliac disease. Remember one thing: Free passive motion in one or more directions at the hip-joint positively excludes hip disease.

Treatment.—In considering the treatment of Pott's disease, or any other disease for that matter, one should know what the course of the

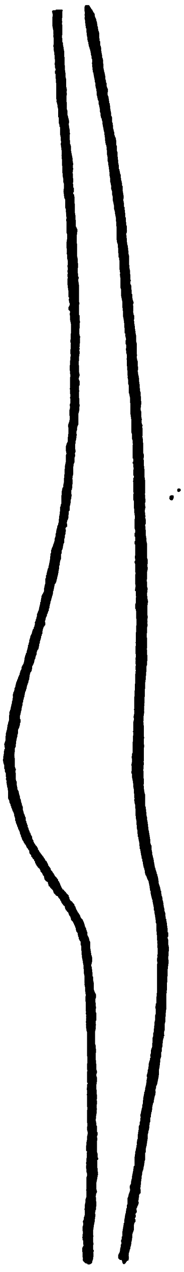

FIGURE VIII.—Tracings of spine before and after straightening of deformity.

disease and the ultimate result will be without treatment, what it will be with the average treatment that a patient gets, and what it will be with ideal treatment. A case of Pott's disease without treatment will grow progressively worse until the maximum deformity for the region affected has been reached; this will usually take about five years, but may take twice that long. Then recovery from the disease, the deformity remaining at a standstill, will take at least five years more. Patients treated as most patients are treated, with a more or less ill-fitting brace or ill-fitting plaster jacket, with no very clear idea on the part of the doctor as to what the support can be expected to accomplish, will be likely to escape with only half or two-thirds the deformity that would result if there were no treatment; and they will be likely to get well in about half or two-thirds the time that the disease would naturally cover. But inasmuch as the deformity is to increase despite the average treatment many patients get discouraged and go from one plan to another and finally abandon all treatment before they are well.

In considering the mechanical treatment of Pott's disease it should always be remembered that the object to which the support is applied is a living and moving, and usually a growing object; that the base of support for and the part grasped by the mechanism is soft human flesh and bone that moves and shrinks under restraint and atrophies and ulcerates very easily under continuous pressure; that no apparatus has yet been devised that completely immobilizes the diseased area or fully and continuously supports the weight of the body above the weakened and decayed spine while the patient sits or stands. If one walks upon a broken thigh bone without adequate support before union is firm one expects a more or less bony deformity. So if one carries a head and shoulders upon a spine weakened from caries and not adequately supported one should expect an increase in the angular deformity depending upon the degree of weakness of the spine and the adequacy of the support. In skilled hands a brace or a jacket may prevent increase of deformity in perhaps half of the cases; skillfully used it may effect some straightening of the deformity in a few; and fail to prevent increase of deformity in others. But the hands of most practitioners have not been trained to use these appliances skillfully and the ideal treatment must be that treatment which these unskilled men can use with a certainty of a reasonably good result. The ideal treatment, then, must be complete and continuous recumbency from the commencement of the treatment till a cure is effected; to be followed by the use of a well-fitting and efficient support for several years.

In case one is fortunate enough to make a diagnosis before the development of deformity a well-fitting brace or jacket should be applied, the patient placed in recumbency and kept there every minute of the time until all stiffness and muscular spasm have passed. Then he may be cautiously let up; if stiffness or muscular spasm return recumbency must be resumed. In this way patients will recover without deformity.

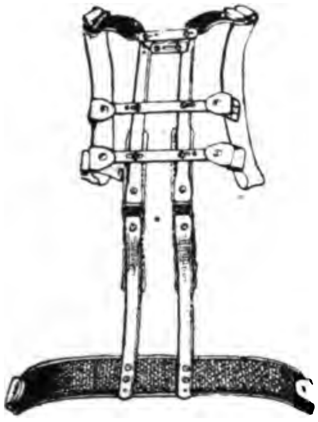

FIGURE IX.—Modified Taylor brace for disease in the lower dorsal spine.

When patients already have spinal deformity one must choose between gradual correction, or forced correction of the deformity, and no correction of the deformity at all. In cases where the deformity is not great, and where it is steadily growing worse, correction can be gradually effected by plaster corsets put on with the spine hyperextended on the "bridge" or some similar support, and renewed every three or four weeks, with the patient in recumbency during this period and for many months afterwards until all symptoms of inflammation have passed. The patient may then gradually get back to his feet, wearing some efficient support for years. But in patients where the deformity is considerable or has been present for eighteen months or more complete straightening by the gradual method is not possible. Such cases if completely, or even nearly, straightened at all must be straightened forcibly by what is known as the Calot method. The risk of death by forced straightening is at least ten per cent, and this must be reckoned with. After forced straightening the treatment must be by recumbency for a year or two with the patient in a plaster jacket, followed by an adequate support for years when he gets up.

In cases where the deformity is considerable and has been present for years some straightening can be had by the use of force, but more or less complete relapse to the former position is likely when once the patient gets up and around. Cases where the deformity has not increased for six months or more cannot be safely straightened by any method, and we must be satisfied with giving adequate support until reasonably sure that the deformity is not going to increase.

Abscesses should be carefully let alone until they disappear or open spontaneously, provided the patient's general health is reasonably good and the temperature does not run high enough to indicate a mixed infection. When cold abscesses open spontaneously they should receive

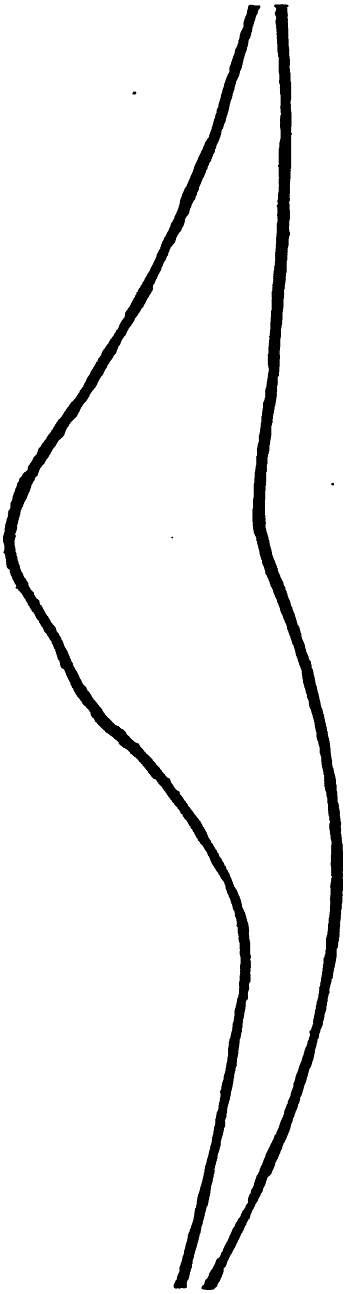

FIGURE X.—Tracings of spine before and after correction of deformity.

no internal treatment. Be satisfied to keep the part reasonably clean externally. Abscesses in patients having a temperature indicating a mixed infection should be evacuated at once by a free opening; but these are few and far between. Let this be our axiom in the treatment of abcesses connected with spinal caries: Do not treat the abscess too much. Let the patient get well if you can.

The treatment of Pott's paraplegia consists of absolute recumbency, with continuous stretching, or gradual correction of the deformity, or forced correction of the deformity, or all three. The paralysis will not pass off so long as the patient is allowed to sit up.

Operative measures for the relief of Pott's paraplegia and for the cold abscesses of Pott's disease always make a bad matter worse. The worst result without operation is better than the best result obtainable by operation.

The means for the treatment by recumbency are: a padded board; a gas-pipe frame, straight or bent; a bar frame, with or without stretching attachments and adjustable supports for the gibbosity.

Fixation and supporting appliances consist of braces and jackets. Unless the surgeon in charge of the patient can measure for, direct the construction of, and personally fit and modify the brace to be used he is not competent to treat the patient with a brace. A brace is simply a tool; useful when intelligently used; useless when unintelligently used. Most surgeons use plaster jackets more successfully than braces. But a poor plaster jacket more often covers a gradually increasing deformity than gives efficient support. I do not think a plaster jacket can be made to hold a patient continuously as straight as he is when it is made on him. It is therefore of the utmost importance that the patient be overstraightened, if it is possible, when the jacket is being put on. This cannot be done by any purely suspension apparatus. Some form of horizontal support, "bridge," or kyphotone must be used. To make a good plaster jacket, firm and hard, and smooth without and within requires good materials and some little experience in the handling of them.

The patient must be covered with skin-fitting stockinette, bony prominences must be protected by felt, plaster bandages must be had that fit the man that uses them; they must harden slowly or rapidly in time with his manipulations; they must not harden too rapidly to prevent smoothing the trimmed edges, but they must set by the time the edges are trimmed and smoothed, or very soon after. I know of no good bandages for sale in the shops; all that I use are made especially for me, and the same may be said of all who do good plaster work. Bandages that carry relatively much plaster harden quickly and make a brittle jacket; bandages that are made of goods containing little or no stiffening, like surgical gauze, harden quickly, and are brittle; those that are made of goods containing stiffening, like crinolin, harden more slowly, and the more stiffening the slower they harden and the tougher will be the jacket.

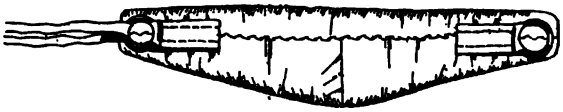

FIGURE XI.—Thomas collar for treatment of cervical caries.

Braces that aim to support by resting on the hips and lifting the shoulders I believe to be practically useless. The anteroposterior leverage brace, that is to say the Taylor brace, or some modification of it I believe to be the most efficient. All jackets and braces worn by a patient who is up and around must be supplemented with some form of chin support if the disease is at or above the eighth or ninth dorsal vertebra. The conventional jury-mast, with its long bow up over the back of the neck and head is the least efficient. I make use of an anterior chin support when using a plaster jacket, and the Taylor chin-piece in connection with the Taylor brace. In disease of the cervical spine restriction to twisting and bending the neck in all directions must be added to the support of the head.

PATHOLOGICAL FATIGUE AND ITS TREATMENT.*

BY IRWIN H. NEFF, M. D., PONTIAC, MICHIGAN.
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"FATIGUE is a regularly and constantly returning symptom experienced by all persons. Our whole life is composed of a series of vibrations—periods of tension alternating with periods of relaxation; and although the rapidity of these vibrations varies immensely, they are recognizable in all our acts, whether voluntary or otherwise. The whole body requires a certain period of absolute and continuous repose in each twenty-four hours, amounting to nearly one-third of the period. It is universally ordained among civilized nations that once in every seven days there shall be a remission of labor and a change of occupation, and we recognize the fact that it is highly advisable for those who are occupied in one pursuit to "break away" from it at least once a year, and indulge for a time in that variety of work which we call amusement.

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*Read at the Detroit meeting of the FIRST COUNCILOR DISTRICT MEDICAL SOCIETY.

"Fatigue occurs directly if we attempt to alter the rhythm of our vital vibrations by a prolonged period of tension at the expense of the period of relaxation, or by demanding, after any length of time, a quickening of the normal rate of vibration. Fatigue, as is well known, may be either general or local, and both forms may be either acute or chronic." (Excerpt from G. V. Poore in "Quain's Dictionary of Medicine," Volume I, page 679).

My remarks deal exclusively with general fatigue. It should be understood that I have strictly adhered to our national idea concerning this symptom, and have considered neurasthenia as a distinctive disease. Hereditary, neuropathic states having a superficial resemblance to the disease may be manifested by fatigue as a symptom, and the "rest treatment" as here outlined may be practicable in some of these cases. It is, however, in the fatigue of neurasthenia and hysteria that we obtain our best results from this physiologic, therapeutic agent.

The effects of physiological fatigue are too well known to need enumeration. However, in order to show that in pathological fatigue we have an exaggeration in degree rather than a change in character of symptoms, it is essential that I briefly review some of our knowledge of normal fatigue. Remembering that primarily the difference between the two conditions is a quantitative one, we can easily accept the doctrine that the multiplicity of the symptoms observed in neurasthenia is merely a progression from the normal. The conditions resulting from normal fatigue are protracted and exaggerated. In brief, we have a prolonged exhaustion of nerve cells, giving rise to a syndrome which we recognize as a disease.

The point which I want first to establish is that, in our fatigue neurosis, we have as cardinal symptoms conditions referable to nervous exhaustion, these symptoms being essentially the same in character as those arising from ordinary fatigue. Another factor to bear in mind is the difference in the recuperative power of individuals. Here we have the foundation stone for the building up of the conditions which we recognize as pathological fatigue. All individuals are susceptible to general fatigue, but all individuals do not have these experiences in the same degree. The ability to restore energy while resting depends upon the nerve constitution of the individual, which requisite may be inherited or acquired. It is this inability or neglect of a person to realize his limitations that has given us what we term "chronic or pathological fatigue."

The researches of Hodge, supplemented by the investigation of Mosso, Nissel and others has demonstrated a working pathology for neurasthenia, and our clinical descriptions are founded on the assumption that chemical and morphological changes in the nerve cells are responsible for the symptoms, a pathology which is more than probable.

The number of symptoms which from the first description of the malady have been ascribed to it, were naturally confusing. Gradually, however, the pseudosymptoms have been eliminated, the lines of differential diagnosis clearly drawn, and neurasthenia has been established as an entity. As illustrating the reluctance of well-known authorities to adopt the disease, mention should be made of Gowers. He not only deprecates the use of the word, but publishes his belief that there is no more reason for adopting this word than there is for adopting a similar course in regard to "debility" among general diseases,—a belief which I do not think is altogether a prejudice one, as a review of his writings on this subject reveals to one that he has judged somewhat hastily.

Dercum, who in this country has probably done more than anyone to advance our knowledge of this disease, has drawn clearly the clinical picture of the malady, and has made a sharp, clean and concise diagnosis. Many mistakes which are made in the diagnosis of the disease can be ascribed to the failure of the physician to appreciate the fact that the condition predisposing to neurasthenia may also be predisposing to other diseases. Thus we may have an attack of hysteria developing in neurasthenia, or we may have a psychosis succeeding a typical attack of the disease. These conditions, however, are rare. Neurasthenia generally takes its course uncomplicated. The inference to be drawn is obvious.. A physician should never diagnose a case as neurasthenia unless he has remembered that neurasthenia is a recognized disease, and that it has been accurately differentiated from other neuroses.

In reference to the diagnosis there are just a few points to which I wish to call attention. Neurasthenia is not hysteria, neither is it hypochondriasis. The possibility of mistaking it for melancholia or some other psychosis must also be remembered. It cannot be denied that the word neurasthenia is often abused. Nervous prostration is a term which it can be said is often used to cover a multitude of sins,—the sins being errors of omission and commission made by members of the medical profession. The whole subject has been so clearly defined and so scientifically and practically described that there can be no doubt that it is a distinctive disease. Its prevalency makes it absolutely imperative that it should be understood in all its details by every practicing physician.

Given such a syndrome, namely, a number of symptoms which can be attributed to fatigue, what should be our treatment? To this question there can be but one answer: "Rest." As applied to therapeutics "rest" is a somewhat comprehensive treatment, and in order to get its best effects it is necessary that it be appropriately used. The many disappointments resulting from the use of the "rest cure" are due to the neglect of the physician to apply correctly its principles. Again the failure may depend on the error of the physician to recognize the condition of his patient. Before using "rest treatment" in any of its forms, it is absolutely imperative that the patient be studied and consulted. The coöperation of the patient should always be sought for. An explanation made to the patient of the results expected may be of material help.

In order to explain these conditions and to give an idea of the value of "rest" I quote from Dercum: "The first practical step towards a successful result in a given case is a careful study to determine the factors at work in producing the fatigue symptoms. If the case be one of simple and uncomplicated neurasthenia it will generally be found that the symptoms owe their origin to some infraction of physiologic living. In the civilization of our day no cause is more potent than 'over-work' and 'nervous strain.' It can readily be comprehended that 'rest' of itself may fail to bring relief, so long as the various unphysiological strains to which the nervous system has been subjected are not removed."*

The physician's conception of the "rest cure" is often an erroneous one. He has perhaps believed that it was impracticable outside of a hospital or sanitarium. To a certain extent this is true. The "rest cure," as originally described by Weir Mitchell, can only be used advantageously in a hospital with special facilities. The modified or partial rest treatment, however, is now in quite general use, and is often unconsciously used by the physician who is not cognizant with its scientific aspects.

Time does not permit me to more than refer to the salient points of absolute and partial "rest" in the treatment of fatigue states. This method of treatment as is well known, has a three fold object: (1) To secure absolute rest of mind and body; (2) To build up the nutrition of the body by increased feeding; (3) To supply to the patient while resting exercise, which is done by massage manipulation, hydrotherapy, et cetera.

The "rest cure" as thus outlined can be used in many cases of neurasthenia, hysteria, and in a few cases of mild mental depression. Its use is contradicted in some apparently favorable cases, and it is essential that these exceptions be borne in mind. Some patients, owing to individual idiosyncrasies, react badly when this method of treatment is used, and still in others the treatment may decidedly aggravate the symptoms. It is for this reason, owing to the difficulty in securing a competent nurse and also the necessary expense involved, that the treatment is not often used in general practice.

In marked contrast the modified or partial rest treatment is easily applied if one bears in mind the object to be obtained and the individual characteristics of his patient. Remembering the admonition of Dercum (quoted before) regarding the necessity of determining the factors at work in producing the fatigue, we can best describe the treatment by considering its essentials. The first requisite is the regulation of the patient's life. The hours of rest, exercise and necessary occupation should be carefully planned and strictly adhered to. If the patient's coöperation cannot be gained our results will be practically *nil.* The patient must be taken into consultation, and we should take pains to explain to him all the details of the treatment and what we hope to gain by its employment.

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* FRANCIS X. DERCUM: "System of Physiological Therapeutics," Volume VIII, page 34.

Having gained the interest of the patient our next step should be the regulation of the patient's diet. Here, again, we may encounter difficulties, due to his preference or aversion for certain articles of diet. These difficulties, however, are not unsurmountable, and as a rule, you will find that he will gradually adapt himself to his new conditions. Suffice it to say that our aim is to improve the nutrition of the patient, and cause a healthy and progressive gain in weight. The third requisite is the necessity for careful attention to elimination. To a considerable extent this is secured by exercise in diet regulation. Hydrotheraphy, however, is here indicated, and is a valuable adjunct to other methods of treatment employed. The hydriatics used may be the simplest, and can be found in any household. A cold sponge bath, a shower bath, and in extreme cases the pack.

In this brief synopsis of the modified or partial rest treatment, I have purposely given only the outlines, believing that the physician, knowing his patient better than anyone else, can easily supply the details. He must remember, however, as I have before shown, that the treatment is to be carried out on definite lines, with reference to the patient's peculiarities and idiosyncrasies. I wish here to make impressive these facts: The partial rest treatment requires no special apparatus; no hospital care is needed; and the patient is his own nurse, the physician being his friend and advisor. Lest the simplicity of the treatment should lead one to forget its scientific principles, I will repeat that every case is a study in itself. The treatment can only be successful with the aid of the patient, and the ultimate result is gained only after persistent and patient labor on the part of the physician. I cannot emphasize too strongly that it is the duty of every physician to acquaint himself with the essentials of the partial rest treatment. I am satisfied that the expenditure of time necessary for the acquirement of such knowldge will be of value to him, and will be of material assistance in the treatment of the many nervous cases which he encounters. Pathological fatigue manifests itself by a characteristic syndrome. By the adoption of the partial rest treatment results are obtained of permanent value—results which cannot be obtained by any other therapeutic measure. Neurasthenia, as Dercum remarks, seems to the superficial observer uninteresting, and it is therefore so little studied; and yet, as he says, the causes are so common and the disease so prevalent that we certainly should try to obtain a clear notion of the disease. I am satisfied that if every practicing physician would become conversant with what is meant by physiological and pathological fatigue he would at once see the practical importance of "rest" in the treatment of the disease; and furthermore I emphasize that the number of neurasthenics and hysterics falling into the hands of the charlatan would show a healthy diminution, if the advantages of the partial rest treatment were universally understood and correctly put into practice.

TRANSACTIONS.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

STATED MEETING, APRIL 3, 1905.

THE PRESIDENT, DANIEL S. DOUGHERTY, M. D., IN THE CHAIR.
REPORTED BY JOSEPH A. ROBERTSON, M. D., SECRETARY.

READING OF PAPERS.

"*EARLY ADVICE FOR THE BABY.*"

DOCTOR WARD B. HOAG read the paper of the evening, which bore the above title. He said in part:

The youngest baby is soon a "creature of habit." With this idea in mind, those who are caring for the baby should be especially careful about handling or holding him when he should be lying in his crib. They should also be regular in the time of feeding.

About eight and one-half per cent of all confinements in New York City are attended by midwives. There is no time in the life of either mother or child when educated medical advice is of more avail than during the first three or four months after the birth of the baby. Is the midwife competent to judge whether the mother is tuberculous, and if so, whether she shall nurse her baby? If not to be nursed at the breast is the midwife capable of prescribing a proper diet, regulating quantity and quality of the food, and the intervals of nursing?

For the first two days after birth the mother's diet is largely liquid. Tea is practically excluded from every nursing mother's use. She should take plenty of liquids—six or eight ounces of milk, gruel or water should be taken each time before nursing the baby. Exercise in the open air is of advantage to all, and absolutely indispensable to many. The baby is never allowed at the breast longer than twenty minutes. Ten or fifteen minutes is usually sufficient. If he eructates his food almost as soon as taken from the breast, there is a strong suspicion that he is getting too much. Between 10 o'clock at night and 6 in the morning, no baby properly nursed through the day, needs more than one feeding, about 2 o'clock. After the third, or positively the fourth month, there should be no nursing between 2 at night and 6 in the morning. See that the baby's mouth is properly washed before each nursing; use absorbant cotton on the little finger, soaked in boric acid solution. The mother's nipples should be washed before and after each nursing with boric acid solution, and then powdered with talcum powder.

The baby should never be allowed to go to bed at night without having had a stool during the preceding twenty-four hours. If the baby is bottle-fed, our greatest endeavor should be to see how little, rather than how much food we can start with.

The doctor spoke in detail of caring for the baby immediately on noticing a loose or undigested stool; and on regulating the diet of a bottle-fed baby.

DISCUSSION.

DOCTOR JOHN J. MACPHEE: Sometimes, in my experience, fifteen or twenty minutes is not sufficient for the child to get nourishment, and I therefore allow him to nurse for half an hour; also, when the baby wakes at night, I often give him a little warm water, but never any sugar, just the plain water, which seems to satisfy him.

DOCTOR FRANCIS J. QUINLAN: Many young babies do not breathe properly, and are said to have marasmus. Very often, when a child cries until taken up, and then stops, it is because while lying down he could not get a sufficient amount of air into his lungs, but when raised, he breathes with less difficulty.

DOCTOR MORRELL B. BEAL: I think that the crying of the average healthy child is a matter of habit, and because he likes to be petted and handled, and I also think that the time to begin to train it is when it is but a few minutes old.

DOCTOR LEVI J. DENCHFIELD: In India, where I practised for a time, mothers use a great deal of tea, and yet the offspring are not marked by nervous diseases.

DOCTOR WARD B. HOAG: I think the use of baby comforts were potent factors in developing adenoids, and in infecting the mouth of the child, and their use should be discountenanced by all physicians.

REPORTS OF CASES.

ACUTE GANGRENOUS APPENDICITIS.

DOCTOR VICTOR C. PEDERSEN: I wish to report a case of gangrenous appendicitis in order to illustrate a point which is not, as a rule, as closely observed as it should be, namely, the septic appearance of the individual, although the temperature, pulse and respiration show few signs. The subject was a strong man, twenty-six years old, attacked thirty-six hours before I saw him in consultation. On the occasion of the consultation his temperature was hardly elevated at all, and his was rather soft, with a distinctly tender spot upon external and rectal examination. The appearance of the patient, however, was that of a person absorbing toxins very rapidly. The man looked very sick. A physician and another surgeon had previously been on the case, and their opinions were divided, the physician wishing to delay and the surgeon to operate. I decided to operate within an hour, and, on opening the abdomen, found an appendix gangrenous as to its mucosa from end to end, very much enlarged, and decidedly adherent. It was removed, the stump cauterized, and sewed in and the abdomen closed up tightly. Uneventful recovery followed.

DISCUSSION.

Doctor Robert H. M. Dawbarn: I have some doubts as to whether a diagnosis of gangrenous appendicitis can be made when the pulse, temperature and respiration are normal or very nearly so, from the single symptom of septic facies, that is, the yellow color, sunken eye, et cetera, which to the practiced eye is indicative of sepsis. I agree with Doctor George Ryerson Fowler of Brooklyn, who, in his text-book on appendicitis, states that in practically every instance in which the first symptom of appendicitis is a chill, the appendix, upon operation, will be found gangrenous.

I wish to state publicly, for the first time, a principle which I have practiced for twelve or fourteen years. When the appendix is found gangrenous, and also a portion of the adjacent cecum, it is usually taken for granted by the operator that the patient is bound to have a fecal fistula. So far as Doctor Dawbarn can ascertain, it seems customary, in such condition, for surgeons to drain and await the inevitable fistula when the slough shall separate from the living cecum. This fistula can positively be avoided, even though the cecum is in part gangrenous, by using the following technique: The mortified appendix itself should be tied tightly at its base and cut away close to this ligature. Then, a purse-string running Lembert suture is made to surround the gangrenous part of the cecum, running in the healthy portion, perhaps one-fourth to one-half inch away from the dead gut. The gangrenous portion is then depressed and the purse-string suture brought together as tightly as possible. When the slough separates, it must, of course, pass on with the feces. In many cases, covering a very long experience, I have never known a gangrenous patch thus surrounded to spread beyond the purse-string suture. A surface two inches, or even more in diameter, may be safely inverted. There will be no risk of obstruction. The ileum is the smallest in diameter of any part of the small gut, whereas the cecum is the largest in diameter of any portion of the large bowel, until we come to the ampulla recti. Therefore, a very large portion of the cecum may be sacrificed within the purse-string suture, and still its calibre remain abundant to correspond with the end of the ileum. An explanation similar to that given for the Kraske method of treating erysipelas may be given to show why the gangrene never goes beyond the purse-string suture. The Kraske method of treating erysipelas of the extremities is to make two rows of cuts in the as yet healthy skin surrounding the limb, and some little distance away from the infected area. The streptococci travel, in the advancing erysipelas, to the first row of cuts in the skin, and seldom can get further, for they meet an army of phagocytes which nature hurries to the region cut by the surgeon. A battle royal is fought right there; seldom do any of the enemies battalions of streptococci get beyond the first line. If they do, however, the second line, a reserve army of phagocytes, meets them at the second cut, and it is rare indeed for the erysipelas not to end its advance right there. In the same way, the local irritation of the purse-string suture in the cecum apparently has the same effect of calling together at once armies of phagocytes, who fight and destroy advancing microbes—in this case probably largely bacteria communis coli. Whether or not this explanation be the true one (and it seems to me probable) the fact remains that the gangrene will be stopped, not extending beyond the circumferential suture-line.

VENTRAL HERNIA FOLLOWING APPENDICITIS OPERATION.

Doctor Pedersen: I also wish to report a case of ventral hernia of large proportions following an appendicitis operation about two years ago. Upon examination the woman presented a large scar through which the abscess had been merely evacuated. The amount of tissue between the outer world and the abdominal cavity appeared to be very little, and the reducibility of the hernia mass seemed limited. Upon opening the abdomen along the site of the scab, it was found that only the skin intervened between the intestines and the body surface, and all the muscles were atrophied, and that the intestines were very densely adherent all around the wound, extending in every direction from one and one-half inch or more in most places. At only one point along the outer edge of the wound were the adhesions thin. Beginning there, the gut was slowly stripped off, almost entirely with scissors and scalpel, as the fibrous tissue was too dense to peal. Thus, the outer lip of the wound was freed of adhesions, while the inner lip was left alone, because the adhesions were glued too far. The free outer lip, consisting of aponeurosis of the outer oblique muscle was now carried over the inner flap for a distance of nearly two inches, and the two flaps were stitched from the base to the apex in each with mattress sutures of chromic catgut. It required about six stitches in each flap to complete the work.

At the present time—six months after the operation—the woman is entirely comfortable and does not experience the least sensation of weakness at the point of injury. The case is reported to show how ready a means of closing a large hole in the abdomen this overlapping of aponeurosis furnishes.

TUNNELED AND GROOVED DILATING SOUND.

Doctor Pedersen: I now wish to demonstrate a tunneled and grooved dilating sound for urethral stricture in the male, which has been in successful use in my hands in the New York Hospital Out-Patient Department and in private practice for three years, and recently at the Out-Patient Department of the Hudson Street Hospital. So far as I know, no absolute duplicate is extant. The instrument is exhibited, however, less with reference to the possibility of originality than of great servicability. The details of the sound are a slightly longer shank than the standard; a curve of the same radius, but half the standard length; a taper of six sizes from shank to point after size ten Erench—size ten French and smaller taper to size five French at the point. The tunnel is five-eights inch long, to prevent buckling; cutting and scraping of the filiform guides. The tunnel is, moreover, a uniform size for all diameters of sound, and sufficiently larger than the filiform guide to permit ease of slipping thereon. The grooves extend only to the bottom of the tunnels in depth, and about three-fifths of the length of the sound in length.

DISCUSSION.

Doctor Daniel A. Sinclair: I think that the size of the tunnel, together with the curve and the gradual taper of the instrument are all points in its favor, as compared with the old Geuley sound.

THE X-RAY AS AN AID TO DIAGNOSIS OF OBSCURE CONDITIONS.

Doctor Milton Franklin: I wish to show several plates, demonstrating the value of the *x*-ray in diagnosis in surgery. When the *x*-ray was first discovered there were made a multitude of extravagent claims for it, which were unjustified, and a reaction had developed with a tendency to discredit the use of the ray altogether.

The first picture is of a patient who had been injured while pulling a wagon out of a shed, and the shaft having been jerked suddenly upward, pushed the arm against the shoulder. Examination revealed no sign of fracture, and the shoulder was bandaged. At the end of two months the arm was still painful and comparatively useless, and *x*-ray examination revealed a large fracture of the clavicle at the scapular articulation, with a separation of about one-quarter inch. When the shoulder was opened by Doctor Bodine he found that no one could have made a diagnosis of fracture because the end of the clavicle was cartilaginous. The suture was made, and another two months will be required before the patient will have the use of the arm, whereas, if the *x*-ray examination had been made in the first place, the patient would have been saved much suffering, an operation, time and expense.

The next picture is also a case of Doctor Bodine's—a fracture of the humerus which had been set at one of the hospitals in the city and allowed to knit. Six weeks later, when the dressings were removed, it was found that the fragments overlapped to the extent of three inches.

It was necessary to cut down upon the bone, chisel the fragments apart and wire them together again. If *x*-ray examination of the arm through the dressings had been made in the first place, much would have been gained by resetting the arm at once, and not waiting for it to knit in the incorrect position.

The third picture is a fracture of the tibia, undetected at the time of injury, and the patient was advised to exercise the limb as much as possible. There was no crepitation and no deformity or mobility. At the end of six weeks the limb continued painful, and *x*-ray examination showed a V-shaped fracture of the tibia, which was impacted, and which was unaccompanied by the smallest vestige of callous.

The next picture is the knee of a child, supposed to have a fragment of needle in the joint, and it was important that the exact condition be recognized early, so that operation might save the patient from injuries due to infection. The only evidence was a fragment of rusty needle found on the floor where the child had been playing. *X*-ray examination revealed the presence of the needle and its location.

Another picture is of the bones of the hand of a patient presented for diagnosis by Doctor Sinclair at the last meeting of the Society. There was much difference of opinion as to the nature of the condition. The *x*-ray showed beyond a doubt that it is tuberculosis of the bones. Incidentally, the case served to demonstrate how unreliable is a fluoroscopic examination, this hand having been seen by thirty or more physicians on the occasion on which the plate was made, and all agreed that there was no involvement of the bones.

DISCUSSION.

DOCTOR ROBERT H. M. DAWBARN: I agree with Doctor Franklin as to the value of the *x*-ray in diagnosis in doubtful cases, but think the same result can be obtained in about one-half the time and without the expense of having a picture taken. I refer to osteophonic percussion. As an example may be mentioned a leg of wood which has been sawed in two, and the two ends placed firmly together. Anyone listening at the end, while someone taps on the other, the sound will be heard about as well as if it had not been sawed; but place a coat or any soft substance between the two fragments, run the fragments together and tap on one end, and there will be a difference in the sound conduction. The same principle applies to the fracture of the shaft of a long bone. It is often difficult to tell whether the fragments of a fractured bone deep in the flesh are squarely against one another. If one fragment overrides the other, with only periosteal surfaces in contact; or if they are perfectly in apposition, and a torn piece of muscle or of fascia, however thin, is between them, the patient might remain forever with his weights and splints on, and not get a bony union. By osteophonic percussion it can at once be ascertained whether the fragments are in apposition. In the Fracture Ward of the City Hospital I have, this past winter, been able to demonstrate the practicability of the stethoscopic examination, such as I have just described. Although there may be a swelling of the soft parts over the seat of the fracture of the shaft, this fact will not interfere with the test.

DOCTOR JOHN A. BODINE: Regarding the value of x-rays as an aid to diagnosis of fractures, I think that not only should the picture be taken by an expert, but it requires an expert to interpret them. In spite of many excellent physical methods of making a diagnosis in fractures, there is a small percentage of cases in which only the x-ray can make the diagnosis positive. The new method of osteophonic percussion of the limb, mentioned by Professor Dawnbarn, has much excited my interest since its publication, but I am inclined to think its practical value in diagnosis is very circumscribed. The diagnosis of fractures, as a rule, so far as the break is concerned, is easy. What is needed is a method of showing when the broken ends have been accurately opposed, and it is here that the great value of the x-ray is to be appreciated. Regarding the shoulder case referred to by Doctor Franklin, no one could have made a diagnosis without the x-ray. What I wish to impress is that the interpretation of the x-ray rests not with the doctor, but with the expert radiographer, remembering at all times that it is a shadow, not a photograph.

SARCOMA OF OVARY.

DOCTOR JOSEPH C. TAYLOR: I wish to report this case, having operated on it two years ago. The patient is now in a perfectly healthy condition. She is forty-nine years old, and reached the menopause at the age of forty-four.. When first seen, she was unable to lie down to sleep, and had an enormously extended abdomen. The growth in the abdominal pelvis reached up nearly to the umbilicus, mainly in the right side, and also presented a large amount of acetic fluid. The patient's symptoms were first noticed by her about six weeks previous to examination. She noticed first, that on moving from one side to the other, something seemed to roll around within the abdominal cavity. Following this was a rapidly developed abdominal distention.

Going through the abdominal wall, the acetic fluid was allowed to gradually escape, for fear of causing severe shock. Great difficulty was experienced in administering the anesthetic, due to dyspnea, and depression of the diaphragm. After evacuation of the ascitic fluid, she breathed very well under ether. On exposure of the abdominal contents, a large, irregularly-shaped tumor with smooth surface, was detected, having its origin on the right side of the pelvis. It was supplied by one of the large ovarian vessels, and was perfectly movable and nonadherent. Great care was exercised in ligating off the pedicle not to allow any seepage from the proximal or distal end to escape into the abdominal cavity. The tumor had the appearance of a sarcoma, being nearly white, somewhat nodular, and proved to be a spindle-celled sarcoma, on examination by Doctor Jeffries.

The question was raised shortly after the operation as to whether or not the whole pelvic contents should have been removed. Inasmuch as the uterus, the left ovary and both tubes were not at all enlarged, and the tumor had ascended into the abdominal cavity and was not connected with them, it did not seem advisable to do a complete operation, as it would have allowed the escape of seepage and blood. The tumor apparently started from one pole of the ovary. Sarcoma would naturally start from the hylum, as there the connective tissue is so abundant. Over three-fourths of the ovarian tissue was perfectly normal in structure, showing that the tumor started at one extremity.

DISCUSSION.

Doctor Louis J. Ladinski: This case recalls to my mind a patient on whom I operated six years ago for a sarcoma resulting from an undeveloped ovary on one side; and carcinoma resulting from undeveloped ovary on the other side. The sarcoma was about six inches in diameter, and occupied the site of the right ovary. There was absence of the uterus and vagina. I saw the patient several times after the operation, and there was apparently a recurrence on the side from which the sarcoma was removed. The patient refused to be operated on then. I saw her a number of years subsequently, but did not learn whether or not she had been operated on. She seemed to be in good health. Literature tends to show that recurrence is the usual sequence in these cases. I approve of Doctor Taylor's method of removing the ovary and leaving the uterus *in situ*, as I believe that there is less chance of recurrence if as little cutting of the pelvic organs as possible is done, provided, however, the sarcoma be thoroughly removed. In Doctor Taylor's case, especially, the diagnosis could not positively be made until after the specimen had been removed and examined microscopically, and removal of the uterus under the circumstances, would have hardly been justifiable.

Doctor Bodine: I wish to congratulate Doctor Taylor on the scientific application he has made of his anatomy. There is, in my opinion, no indication for removing the uterus and other ovary in this case. Recurrence of sarcoma is not by continuity or contiguity of tissue so much as by blood current. The probabilities are that recurrence will be in this case, if at all, in the liver. Such has been my experience in the metastases of nearly all sarcomas below the level of the diaphragm.

ABSCESS OF ANTRUM.

Doctor George B. McAuliffe: I wish to show this patient, who has been operated on through the canine fossa and apparently cured. A year later there was still a profuse discharge of pus, and I was considering the advisability of reopening the primary wound, but sent the patient to a dentist to have her first canine tooth examined. The dentist extracted the tooth, and immediately the pus stopped discharging. An ingenious gold drainage tube has been kept in the socket to insure a perfect cure. The middle turbinate has been exsected to keep the normal opening free. The patient is enabled, by taking a mouthful of antiseptic solution, to flush out the antrum.

DISCUSSION.

Doctor Francis J. Quinlan: I think cases similar to the above should be treated with the idea of saving the tooth, if possible, as well as of draining the abscess. If an opening was made above and a little behind the canine fossa, and this was kept clean and curetted, there might be a possibility of saving the tooth. When forced, however, I do the canine fossa operation, taking a wide sweep, and giving myself sometimes room enough to put my finger in the entire cavity.

Doctor Daniel S. Dougherty: The character of the case should be taken into consideration before making a hard and fast rule as to whether or not to perform a canine fossa operation. The malignancy of the condition and the character of the pus were prominent factors. Of course, if there is only simple inflammation, opening through the lateral wall is sufficient, but in the case presented by Doctor McAuliffe, I think it was necessary to open the canine fossa and curet it.

WILLS HOSPITAL OPHTHALMIC SOCIETY OF PHILADELPHIA.

STATED MEETING, JANUARY 23, 1905.

Doctor CHARLES A. OLIVER, Presiding.

Doctor James A. Kearney showed a most interesting case of hypopyon keratitis from traumatism in the left eye of a middle-aged man, a house patient of Doctor Conrad Berens. The conditions and various methods of treatment were fully and informally discussed, Doctors George C. Harlan and Oliver expressing their preference in favor of the Saemisch operation, while Doctor S. Lewis Ziegler tended towards the employment of paracentesis. The various methods of cauterization of the infected corneal area were alluded to, Doctor Ziegler stating that he had most frequently secured good results in desperate cases with careful touching of the part with a one-per-cent strength solution of formalin, and in selected cases by careful application of equal parts of camphor, chloral and carbolic acid.

In the absence of Doctor W. W. McClure, the Senior House Surgeon exhibited a case of corneal staphyloma which had been operated upon by excision of the staphylomatous portion of the cornea and bringing the two lips of the wound together by two interrupted sutures. The corneal scar was fully healed and the anterior face of the membrane was properly curved. In the discussion Doctors Oliver, Ziegler, and Harlan compared the relative values of the different methods of procedure and cited instances that had occurred in their public and private practices.

Doctor Kearney showed for Doctor P. N. K. Schwenk several most excellent results from the operation of abscission of the cornea. The indications for the procedure, the modifications of technique, and the comparative results of the operation were fully discussed by Doctors Dewey, Harlan, and Kearney. The methods that had been in vogue in the hospital and those which were employed at the present time, were given in the fullest detail, eliciting much regarding why some of the plans had been supplanted by others and giving reasons for the substitution of other procedures.

DOCTOR STANLEY S. SMITH read a report of a most interesting case of gumma of the iris and ciliary body occurring in the clinic of Doctor Charles A. Oliver. The case presented all of the characteristic symptoms of the condition, and was fast becoming well. Doctor Smith stated that it was very instructive to note the secondary rapid diminution of vision produced by haze in the media which had been probably caused by a deposition of the gummy infiltrates into the chambers of the eye. In the discussion, Doctor John T. Krall commented upon the comparative painlessness of specified cyclitis and the character of the infiltration into the aqueous and vitreous which was chiefly composed of round cell exudates. In support of the belief of others that gummata of the ciliary body usually occur on the upper border of the cornea, he had seen but one in which the swelling was situated to the lower side.

The various methods of administering mercury were informally discussed, the concensus of opinion being in favor of the use of mercurial ointment by inunctions.

DOCTOR JOSEPHINE W. HILDRUP read a paper upon ten cases of interstitial keratitis, nine of which had been studied in the clinic of Doctor Oliver, and the remaining one in her own clinic at the Woman's Hospital. The ages of the cases varied from six years to fifty-eight years. The dyscrasia had been very carefully studied in all. Females had been preponderant in the series. With but one or two exceptions, all of the cases had passed on to resolution.

The discussion, which was quite informal, embraced the forms of treatment which were the most prevalent among the surgeons in the institution. Doctor James A. Kearney stated that he had seen much good from the use of inunctions of protiodide of mercury. Doctor Dewey spoke favorably of the use of dionin, claiming that it had hastened resolution in a number of cases which he had seen. He had not had much experience with subconjunctival injections and had seen some unfortunate results, such as conjunctival ulceration, giving rise to disfigurement from their use. Doctor Kearney exhibited a case in which the right eye was being treated by the ordinary routine methods, supplementing these by subconjunctival injections of common salt solution in the left eye; the latter organ (although the first involved) seeming to grow well more rapidly than its fellow. Doctor Krall stated that he had learned to share the opinion of others that if injections were made under the conjunctiva, their effects would be to produce a number of adhesions between the bulbar conjunctiva and Tenon's capsule; and stated that even though the injections were made into the capsule, their good results were but transitory as adhesions were sure to occur. In other words, he, with many other authorities, believed that such injections did more harm than good.

Doctor Kearney presented a case of double pterygium from Doctor William Zentmayer's clinic, in which one eye had been operated on by the von Arlt method and the other by the McReynolds. He exhibited a case of entropion of the upper lid, taken from the same clinic, in which a Hotz operation had been performed with little or no improvement, followed by a Jaesche-Arlt operation, which afforded a very satisfactory result. He also showed a case of entropion from the clinic of Doctor Frank Fisher in which the cilia had been transplanted and the tarsus removed, giving most excellent results. In the discussion, Doctor Krall was of the opinion that the McReynold's operation had no advantage over the von Arlt. He believed that every case should be treated on its own merits, one method of operation not being applicable to all. Doctors Dewey, Milton A. Robison, and Smith cited several cases in which different plans of treatment had been most successfully applied.

ORIGINAL ABSTRACTS.

SURGERY.

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PRESENT VIEWS ON THE TREATMENT OF THE ENLARGED PROSTATE.

THE April number of the *Annals of Surgery* contains a series of papers covering the various phases of this subject, written by men who are familiar with this line of work. Only brief mention of the most important can be made in this review.

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Paul M. Pilcher, M. D., considers "Studies in the Pathology and Etiology of Obstructive Hypertrophy and Atrophy of the Prostate Gland."

The anatomy of the normal gland is first described, the gland consisting essentially of two lobes of varying proportion of stroma and glandular elements. The stroma is composed of muscular and connective tissue elements influenced by age and function, the glandular elements forming a large proportion of the substances of the gland. Small blood-vessels and capillaries run through the stroma.

The gland is composed of a number of lobules of the alveolar type which are connected with the prostatic urethra by ducts.

Specimens of gross pathology present three distinct types or forms. The greatly enlarged soft prostate, the relatively small contracted hard prostate, and a mixed type.

Infections like gonorrhea and cystitis seem to have no marked effect in producing a particular type of pathological change.

The large hypertrophied form may vary in size from two hundred grains to five ounces. The increase may be in one lobe or both, or a median enlargement may be associated with one or both. The capsule is thicker than normal, with distinct fibres, the surface of the gland being irregular according to the part or elements enlarged.

The atrophic form may be smaller than normal, two hundred fifty grains being the average amount of tissue removed. The capsule is adherent, surface irregular, urethra distorted, patient suffering from retention or incontinence.

Microscopic examination of the hypertrophied variety shows a relative and absolute increase in the amount of glandular tissue. The ducts are enlarged and filled with secretion, degenerated epithelium, leucocytes, amylaceous bodies and calculi. The muscular and connective tissue are increased, but in certain conditions the muscular fibres may disappear.

In the atrophic form the glandular elements may be smaller than normal; the muscular exceeds the connective tissue. Some parts may be apparently compressed while others will be enlarged.

The writer is inclined to believe from a study of his cases that hypertrophy is due to a glandular overgrowth, distorted and increased by the degenerative changes of old age rather than to an inflammatory agency constricting the ducts at some points and causing them to dilate at others. Gonorrhea is not found to be an important factor in the production of the disease. Anything which tends to produce the fibrous connective tissue in an active gland favors hypertrophy.

* * *

Paul Thorndyke, M. D., of Boston, Massachusetts, writes on "The Use of the Catheter in Chronic Prostatic Hypertrophy." While we would prefer to write about the advantages of a suprapubic removal, a Battini or other palliative operation, still the catheter has its place in the treatment of persons unfit to endure the shock of a radical operation, or when from any reason they become bad surgical risks: such may be made comfortable for the rest of their lives by the daily use of the catheter under proper precautions. Cases of clean but atonic bladder are not improved by an operation, hence are candidates for catheter treatment.

Cases of slight enlargement with small amount of residual urine with a clean bladder may remain well for years by an occasional visit to the surgeon, though they may in time come to operation.

"The fact that we have several new strings to our bow does not mean that the old one is worthless and must be thrown away."

* * *

Charles H. Chetwood, M. D., of New York, discusses "Prostatism Without Enlargement of the Prostate."

By prostatism is meant a series of symptoms which usually occur with senile hypertrophy of the prostate, such as urgency and frequency of urination, pain during and after the act and partial or complete retention of urine. This is due to a fibrous infiltration of the vesicle orifice and is known under the name of contraction of the neck of the bladder; it does not necessarily belong to old age but may be associated with enlarged prostate. These conditions are confused in the minds of operators and writers of the present day. Removal of the prostate when the contraction is not taken care of leads to failure. When an instrument is introduced there is free passage until the vesicle sphincter is reached, then there is slight resistance. Residual urine may amount to three hundred grammes. Functional acvitiy of the bladder is lost. Operation consists in severing the fibrous ring by the Battini operation. Function is afterward completely restored.

* * *

Frances S. Wilson, M. D., details "Some Anatomical Points Concerned with the Performance of Prostatectomy."

After reference to Doctor Gouley as the one American who kept the operation of prostatectomy before the profession, he calls attention to the complete tumor formation into three direct lobes by a distinct outer sheath and says that there is a marked space between the gland and the inner wall of the sheath where enucleation may with safety be conducted. As the lateral lobes lie above that point of the urethra where open the ejaculatory ducts, therefore any operation that does not involve the floor will not injure the ducts. Removal of the median lobe need not necessarily involve the ducts.

The work of experts has taught the profession that operative treatment has reached such a stage of perfection that it should be recommended to patients as of greater benefit than the danger of catheterism.

Seventeen years of experience with this subject had led to the following conclusions: That the mortality attending the catheter treatment is even greater than that attending prostatectomy. In the majority of cases the prostate is accessible and easily removed by the perineal route: when not thus accessible it may be reached by the suprapubic route.

The mortality of the perineal route is less than by the suprapubic and when possible should be the operation of choice. When in doubt, try the perineal route and when not feasible, change to the suprapubic. The lower incision will not do harm but will do good by favoring drainage.

Howard Lilimthall, M. D., of New York, writes on "The Treatment of Prostatic Hypertrophy by Enucleation Through a Suprapubic Incision." His remarks are based on an experience of thirty-one cases, all of whom recovered from operation, and all but two had complete functional control. One of these has functional weakness of the sphincter so that he can hold but three ounces while the other has a small amount of residual urine. They vary in age from fifty to eighty-three, many having return of sexual function.

After describing the technique of the operation, he gives the following as its advantages: That no important nerves or vessels are cut; the urethra is not injured; the bladder can be examined at the same time; absence of shock; it may be done under nitrous oxide anesthesia. Drainage may be done by siphonage without perineal incision.

* * *

Joseph Weimer, Jr., M. D., of New York, tells "How the Prostate may be Removed by Suprapubic Incision by Using Nitrous Oxide Gas as an Anesthetic."

"The former danger of the operation due to anesthesia, to hemorrhage, to shock, to sepsis, are not worth discussing today because they no longer exist." The only objection worthy of mention is the long time necessary to heal the wound. He then gives a brief synopsis of ten cases. Seven to fifteen minutes is about the time consumed in difficult cases, with no mortality. This method is of extreme value in the aged.

* * *

Hugh Young, M. D., of Baltimore, describes what he calls "Conservative Perineal Prostatectomy."

This consists in opening the urethra by careful dissection and inserting a retractor, which brings the gland into full view, when incision is made in the capsule on either side of the median line. On this lies the conservatism, namely, to avoid injury to the ejaculatory ducts. Each lobe is carefully enucleated by itself. Seventy-five cases have been operated on by this method, with no deaths that could be attributed to the operation.

* * *

E. Wood Ruggles, M. D., of Rochester, writes about "The Cause of Incontinence as a Sequel of Prostatectomy."

The theories advanced seem hardly adequate to explain the condition. Paralysis, partial or complete, of the external sphincter, must be present. The nerve supply to this muscle has many descriptions. According to Gerrish and Morris, it is derived from the dorsal nerve of the penis, a branch of the pudic nerve. Gray and Cunningham credit it to a branch of the deep or muscular division of the perineal nerve which is derived from the pudic. All these authors may be wrong. A nerve supply may run close to the prostate, which may be injured in active manipulation. When the incision is directly median, none of these will be cut. The writer suggests that the incision may be made as close to the prostate as possible, exactly in the median raphé of the compressor urethra and the utmost care be exercised to avoid stretching and laceration of the muscles.

Another suggestion which I do not believe to be the true one, is that nature has provided such an important outlet with two muscles, and one of these may be on duty while the other rests. Periods of rest may be necessary to the performance of function, and paralysis of one may lead to imperfect action of the other.

* * *

There are two more important articles, one by Lewis Stephen Pilcher, M. D., of New York, on "The Choice of Operative Method for the Removal of the Hypertrophied Prostate," and another by John H. Cunningham, Jr., M. D., of Boston, on "The Use of the Cystoscope in Prostatic Hypertrophy." Both are excellent articles, but cannot be at this time considered. C. G. D.

OBSTETRICS.

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TOXEMIA OF PREGNANCY.

DAVIS (*American Journal of the Medical Sciences,* February, 1905) takes up a brief consideration of the toxemia of pregnancy. He regards persistent nausea and eclampsia as due to a toxic state of the blood. Some stress is laid on the syncytial theory of intoxication. The syncytium is regarded as fetal in origin, invading maternal tissues and becoming disseminated through the blood current to remote structures. Immunizing substances are formed, preventing, in normal cases, the extension of the syncytial toxines by a process of neutralization. If the immunizing bodies are inadequate, the normal balance is disturbed and a toxic state results, ending, perhaps, in eclampsia or the formation of syncytial neoplasms. Syncytialisin, a ferment obtained from placental tissue, causing hemolysis and formation of thrombi when injected into animals, may be a very important factor in the causation of eclampsia.

The thyroid gland is accredited with an important part in the formation of immunizing substances, consequently the enlargement of this organ, so often observed in pregancy, is taken as an indication of increased functional activity during this period with an increase in production of the syncytial "antitoxin."

In common with other recent observers Davis considers the renal genesis of toxemia as of rather minor importance. The most characteristic changes are found in the liver. Next in frequency to toxemia of hepatic origin, comes that due to intestinal causes, thyroid insufficiency and renal toxemia being next in order.

From these unsettled points, which are rather given the significance of assured fact, the writer makes a practical application of the study of the toxic state of pregnancy.

Since the pathological changes are not primarily, except in a minority of cases, due to renal disease, it is obviously insufficient to content one's self with an examination of the urine. The pregnant patient should be kept under close observation and any unusual, persistent symptoms should be regarded as indications of a possible beginning toxic condition, until otherwise explained.

Treatment consists largely of hygienic regulations. Nitrogenous food is largely reduced. Milk is recommended. Fruits and vegetables are allowable. Fresh air, exercise, bathing, et cetera, are important. Saline purgatives are harmful in the acute stages, favoring the absorption of liquefied feces. Calomel is to be preferred for immediate use. Thyroid extract is of benefit at times. Narcotics should be avoided. Normal salt solution by infusion and enema is of the greatest efficacy. The hot pack is to be used with caution as it often causes increase in the pulse tension. In very serious cases, cleaning out the uterus offers the only hope.

C. G. P.

PEDIATRICS.

By ARTHUR DAVID HOLMES, M. D., C. M., DETROIT, MICHIGAN.

DIFFICULT CASES OF INFANT FEEDING.

THERON W. KILMER says (*Medical News,* August 3, 1904): There is no branch of medicine or surgery which is more difficult of comprehension or taxes the resources of a physician more than the rational feeding of an infant, especially one that has been fed improperly for some weeks or months. It is matter of congratulation that there have been marked changes in the care and feeding of infants from days of long ago. The dirty-mouthed baby, the foul nipple, the microbic nursing bottle incubators, and the cholera infantum milk, have been relegated to the realms of the past, but still the physician is bothered with cases which have been improperly fed and the author outlines a typical case, from breast to bottle, to condensed milk, and then to the patent foods, et cetera.

The treatment of such an infant, he advises, is to have the child placed in the hands of a trained nurse if possible, wash the stomach each day with warm water, especially if there is much vomiting, give the bowels a good flushing with a decinormal salt solution. and start baby on a weak cereal water, such as barley water. Weigh the baby naked each day and at the same hour. After a few days add a tablespoonful of milk to the bottle and watch the result on the stools, increase each feeding, getting the baby back to a feeding that he can fully digest. If the child refuses food through ruined digestion, feeding by gavage is often successful. In all cases the problem is, adjust the food to an infant whose powers of digestion and assimilation are very feeble or easily disturbed.

His conclusions are: (1) The artificial feeding of babies is not the simple and easy problem which some of our lay friends seem to regard it. The physician should be consulted in every case where a baby is fed by either breast or bottle. Every baby is a law unto himself and should be fed as an individual. (2) The general public should be taught that they should not and cannot feed the rising generation of infants on "any old thing" and in any way they choose. A baby's food should not be experimented with by the laity. It is the baby's life and parents have no right to trifle with it.

ALKALIES IN INFANT FEEDING.

Southworth (*Archives of Pediatrics,* February, 1905) says alkalies added to the diluents of cow's milk have long been employed under the impression that they acted as antacids, neutralizing cow's milk and making it conform to the supposed alkalinity of breast milk, but since breast milk has been proven to be actually faintly acid, this necessity has lost its force. Large amounts of alkalies prevent stomach digestion, leaving the intestines the task. While often useful for limited periods they should not be prolonged. By adding moderate amounts we may limit the task laid upon the stomach to one which it is able to perform, and clinically many excellent results have been obtained by their use. The choice between considerable amounts and moderate amounts or the rejection of both depends upon the type of case with which we have to deal.

Milk diluted with plain water is promptly clotted in the stomach by the rennet ferment and the clot is made firmer when acid is secreted. Limewater added to milk checks the immediate action of rennet upon the whole mass and makes the clotting more gradual, altering the form of the curd, but leaving no large amount of alkali behind to inhibit the stomach digestion.

Bicarbonate of soda added to milk, the action of rennet, hydrochloric acid and pepsin are all prevented by the greater amount of antacid present until this is finally neutralized. In the meantime portions of the milk are not liable to get beyond the fluid state and continue to escape into the intestines. This reduces materially the burden of digestion laid on the stomach, or if the alkalinity persists a sufficient time, relieves it entirely, the labor falling on the intestines. In the infant the stomach is just beginning its function, and the early secretion which acts on the milk is the rennet. Hence it is not difficult to understand the clinical effects of adding ten per cent of limewater or two grains of bicarbonate of soda to the ounce to the food of very young infants. The food is weak in that the proportion of milk is small.

The milk is decidedly alkaline so that the rennet ferment will not act and the effect is to promote rapid emptying of the stomach, for whereas curdled milk tends to be retained by the stomach, fluid milk tends to pass into the intestines. This assists in tiding the infant over a period of undeveloped and difficult gastric digestion, and as later, the alkali is reduced directly from ten per cent to five per cent or from two grains to one grain to the ounce, and also as the amount of alkali relative to the milk is indirectly decreased by augmenting the amount of milk in the mixture, the effect of the alkali is gradually lessened. The effect of adding alkalies to the foods seems then to be that of influencing the place and type of the digestion of the food and the problems which we must work out in the near future will be to determine the proper kinds of alkali and the quantity of each alkali to be added if we desire to produce certain specific results, and also to determine more accurately the indications for their use or nonuse in different types of cases.

A NEW PHYSICAL SIGN OF RICKETS.

R. Neurath claims (*Rev. Mens. des Mal. de l'Euf*, June, 1904) that rickets can be readily diagnosed by an examination of the hand, owing to the existence of a peculiar deformity in the skeleton of the fingers. The second phalanx is hypertrophied, while the other two are normal. The enlargement is chiefly on the dorsal surface, so that the deformity is best seen by looking at the hand in profile. At the level of the enlargement the skin though normal appears stretched and is thrown into folds only with difficulty. Another deformity though more rarely found is that in which the first and second phalanges form a cone, while there is a dorso-palmar thickening of the third phalanx, so that the finger resembles a thin skittle. Occasionally the terminal phalanx has a drumstick appearance. Radiography shows the enlargement is due to periosteal thickening. These deformities occur most commonly in the first year of life and only occur after that age in severe cases. The changes disappear under antirachitic treatment.

OTOLOGY.

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THE OPERATIVE TREATMENT OF DISEASES OF THE EAR IN CHILDHOOD.

Edward Bradford Dench, M. D. (*Archives of Otology*, Volume XXXIV, Number II) considers the subject under the following headings:

(1) The operative treatment of acute otitis media.

(2) The operative treatment of the complications of acute otitis media.

(3) The operative treatment of chronic nonsuppurative otitis media.

(4) The operative treatment of chronic purulent middle ear inflammation.

He divides the treatment of acute otitis media into, first, the treatment during the attack; second, during the interval. Whenever in childhood we find a patient suffering from an acute inflammation of the middle ear, giving rise to a persistent increase in body temperature, operative treatment is imperatively demanded. Early and free myringotomy is urgently called for. Except in very young infants general anesthesia is much better and probably chloroform is the best anesthetic, while in older children nitrous oxide gas is the ideal drug.

The incision should be exceedingly free. It should extend from the lower pole of the membrana tympanæ upward and backward following the posterior peripheral attachment through the posterior fold, and well upward into the tympanic vault, thus providing free drainage for both atrium and vault. In addition to this incision a horizontal incision at right angles to this may be made backward from the short process of the malleus, carrying it upward, backward and inward to meet the vertical incision. In this operation all aseptic precautions must be observed.

Doctor Dench gives, under internal treatment, the removal of enlarged tonsils and adenoid vegetations.

The complications of acute middle ear inflammations are:

(1) Extension of the inflammation to the mastoid.

(2) Extension to the lateral sinus or jugular bulb, causing sinus thrombosis.

(3) Extension to the meninges, causing a localized meningitis or epidural abscess, or a diffuse meningitis.

(4) Extension to the brain substance itself with the production of a brain abscess either cerebral or cerebellar.

In children operate earlier than in adults as the external canal is relatively narrower and offers less free drainage. Moreover, the mastoid is but poorly developed and allows infection to pass to the meninges more readily. There are also often dehiscences found in the tympanic and central roof through which infection can readily pass to the dura. In all cases in childhood where free myringotomy does not relieve pain and temperature at the end of a few days the mastoid should be opened and a typical mastoid operation performed, even for no other indication than pain and temperature and in young children considerable elevation of temperature alone.

Infection of the large venous channels within the cranium may occur, either by direct extension from the middle ear or secondarily to mastoid inflammation. A temperature varying from 99°-100° at one time in the day, then suddenly rising to 104°-105°, only to fall to normal in a few hours, should suggest to the surgeon involvement of the lateral sinus. Such a temperature is generally not accounted for by involvement of the mastoid and the sinus should be inspected. Doctor Dench says: "I am in favor of incising the serous wall and passing the curette downward to the jugular bulb, in cases with marked fluctuations in temperature, even though inspection and palpation of the wall seem perfectly normal.

The treatment of brain abscess is the same as that in the adult but the diagnosis is often very difficult on account of the age of the patient, making localizing symptoms unobtainable. In such cases the diagnosis must be made upon the sub-normal temperature, choked disc, emaciation, and slow pulse. The abscess cavity must be evacuated and packed with iodoform gauze.

The chronic inflammatory processes which may involve the middle ear are:

(1) Chronic nonsuppurative otitis media.
(2) Chronic suppurative otitis media.

In the child the chronic nonsuppurative variety claims but little attention and the surgical treatment is that of the acute condition and that of the interval.

In the chronic suppurative cases if the child is seen before the condition has existed for a considerable time prompt nonoperative treatment may succeed. The first among these is thorough and systematic cleansing and irrigation with antiseptics; at the same time the upper air passages must be put in a thoroughly healthy condition, the general hygienic condition looked after and the patient's general health cared for. Failing in these general measures the suppuration can only be relieved by means of the radical operation. The necessity should be emphasized of performing these operations upon children more frequently.

LARYNGOLOGY.

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THE CENTENARY OF MANUEL GARCIA.

One of the most unique and memorable occasions in the history of medicine and, perhaps, the most interesting to laryngologists was the celebration at London, on March 17, of the one-hundredth birthday of Manuel Garcia, the inventor of the laryngoscope.

Manuel Garcia was born at Madrid on March 17, 1805. He received instruction in singing at an early age and, about 1825, came to New York with his father and sister to introduce Rossini's "Barber of Seville." While in Paris in 1829 he retired from the operatic stage to devote himself to teaching music. It is said that one reason which led to his giving up the stage was impaired health. He early became interested in the anatomy of the larynx and sought to devise some means by which he could study the cords in the living subject. He finally accomplished his aim by means of a small mirror placed in the back of the pharynx. His studies were made on himself and reported to the Royal Society of London in 1855. Since 1850 his home has been at London.

In the *Revue Hebdomadaire de Laryngologie, d' Otologie et de Rhinologie,* March 25, 1905, is an interesting account of the celebration held in London to commemorate his hundredth birthday and the semi-centennial of the invention of the laryngoscope. The celebration was held in the hall of the Medical and Chirurgical Society of London, which had been magnificently decorated with plants and flowers. Garcia was seated in the presidential chair, on a raised platform, surrounded by his family. The portrait of Garcia, painted by the American painter, Sargent, hung in a conspicuous place. A bouquet of flowers, sent by Madame Marchesi, bore the inscription, "To the Christopher Columbus of the Larynx." Sir Felix Semon was chairman of the committee on organization and there were present representatives from many countries, including leading men of science and of music. In the March number of the *Laryngoscope,* which is the Garcia Jubilee number, there is reprinted the original article of Garcia, entitled "Observations on the Human Voice." In this article, there are some very careful observations recorded of the movements of the glottis and explanations offered as to the method of formation of the different registers. His invention of the laryngoscope has been of incalculable value to science and especially to medicine, but has added very little to the art of teaching music.

In the same number of the *Laryngoscope* are articles by St. Clair Thompson on the "History of the Laryngoscope;" "In Memoriam," by Sir Felix Semon; "The Pioneers of Laryngology," by Fayette C. Ewing.

DERMATOLOGY.

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SYPHILIS AND CANCER.

Etcheverry (*Ann. de Derm. et de Syph.,* August-September, 1904). This research was undertaken in Audry's clinique in Toulouse, and a consideration of the connection between the two diseases was directed to the occurrence of lesions on the tongue and buccal mucous membrane.

The facts are grouped in three classes according as: (1) Cancer supervened in syphilitic patients upon a preceding leucoplakia; (2) without leucoplakia but in the presence of other local syphilitic lesions such as gummata, scars of gummata or of hard chancres; and (3) in the absence of all local signs of syphilis.

Thirteen cases of epithelioma developing upon syphilitic leucoplakia are detailed under the first heading. This sequel is relatively frequent. In the second group twenty-two cases are noted. In the third no direct transformation of syphilitic into epitheliomatous lesions could be established but the fact of previous syphilis was ascertained in all the fifteen cases quoted.

Etcheverry, struck with the singular frequency of association of the two diseases, speculates whether there may not be some direct predisposition in syphilitic patients, as such, to develop cancer. In epithelioma of relatively young patients, he states that syphilis may almost always be found as a previous accident. The greater frequency of cancer of the mouth in men than in women coincides with the greater frequency of syphilis in men. According to Fournier, syphilis is eight times more common in men. Etcheverry hazards the suggestion that the cachexia produced by syphilis may be a directly provocative cause of ensuing cancer.

It is probable that the same close connections obtain between cancer and syphilis of the rectum as has been here noted in the case of the mouth, but observations on this point are too few to be of value.

SYPHILIS IN MONKEYS.

Metchnikoff and Rous, in their third communication on this subject, relate further experiences (*Journal of the American Medical Association*) and show the results on colored plates.

They are convinced of the syphilitic nature of the lesions observed on the small monkeys. Their transmission to the chimpanzee, and the development of both primary and secondary lesions on the latter is further proof. They believe that the prospects are good for obtaining a specific vaccine by passing the virus through the smaller monkeys, possibly combined with specific antiserums.

NEUROLOGY.

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THE ETIOLOGY OF RABIES.

Edwin McD. Stanton (*Albany Medical Annals* for March, 1905, page 184) has a review of recent work by Negri on "The Etiology of Rabies." In 1903, Negri announced the discovery of small endocellular bodies in the nerve cells of animals dying of rabies, and stated that he believed these bodies to be protozoa and the specific cause of the disease. Soon after this announcement, in a second communication, based on extended histological studies controlled by inoculation experiments, he emphasized the importance of this discovery of the rapid diagnosis of the disease. Stanton gives the morphology and histology of these bodies as described by Negri, and makes mention of the work of others in these cases, corroborating the Negri discovery. In conclusion Stanton says "that the result of these researches seem to demonstrate quite conclusively, first, that after the onset of the symptoms there are present in the nerve cells of the rabic animals endocellular bodies which vary greatly in size, and which are highly resistant to chemical and physical agencies; and second, whatever the specific parasite of rabies may be, at some time in its life-cycle it is of such size as to readily pass through filters impervious to known bacteria. The protozone nature of the Negri bodies is, however, by no means proven, and the fact that these bodies remain structurally unaltered long after the disappearance of the virulence, is not in accord with the known facts concerning the changes which take place after death in other forms of cell life."

I. H. N.

THE APPLICATION OF HEAT IN NERVOUS DISEASE.

One of the leading articles in *The Therapeutic Gazette* for March, 1905, is on "The Use of Heat in the Treatment of Nervous Excitation and Spasm." The author calls attention to the use with which heat can be applied, and deplores the fact that the advent of drugs and sedatives has superseded the application of heat and cold for symptomatic relief. Attention is called to the use of a hot pack in insomnia and chorea in children, and the preference which it should have over other measures. The author states that, while the hot pack in the treatment of chorea in children is extensively used by English practitioners, it has been used in this country comparatively seldom. I. H. N.

THE DIAGNOSIS AND TREATMENT OF MYELOMALACIA.

F. W. Langdon (*Journal of Nervous and Mental Diseases,* April, 1905) writes on "Myelomalacia, with Especial Reference to Diagnosis and Treatment." The author makes mention of numerous authors, tending to establish the distinction between softening and "myelitis." Langdon considers the distinction between the two conditions, and gives a table of differential diagnosis. Several cases are cited in detail to prove the truth of his assertions. The differential diagnosis would seem to be of considerable practical importance, as the early recognition and prompt treatment render the prognosis of myelomalacia much more favorable than that of myelitis. The article is important as it emphasizes the fact that the spinal cord, as the brain, is subject to conditions of softening dependent on thrombus and embolus, and that the diagnosis of myelitis should be clearly differentiated from these conditions, as the author points out an early recognition of myelomalacia may be of material benefit to the patient. I. H. N.

THERAPEUTICS.

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THE RATIONAL TREATMENT OF TYPHOID FEVER.

Doctor W. R. Lastrapes, of Louisiana, in the March number of *The Therapeutic Gazette,* discusses the treatment of typhoid fever, and in doing so brings out in strong relief principles that cannot too often be presented to the practitioner.

At the outset the doctor thinks calomel is practically always indicated, to be followed in the majority of cases by a saline. This is to prepare the patient for the continuous treatment that is to follow. Of this part of the treatment the administering of antiseptics is considered the most important—a course that should be kept up until all the severer symptoms of the disease have passed. The antiseptic drugs adapted to the purpose include thymol, guaiacol carbonate, carbolic acid, iodine, salol, salicylate of bismuth and sulphocarbolate of zinc. A combination recommended consists of carbolic acid, bismuth subnitrate and simple elixir with deodorized tincture of opium added whenever diarrhea or pain needs to be corrected.

The possible advantages claimed from the use of antiseptics are these: the tongue becomes clean and moist, tympany does not occur, diarrhea and delirium are controlled, and the temperature remains so low that antipyretics are not needed.

Next in importance after the antiseptic part of the treatment comes the question of nutrition. The diet should be liquid in character during the disease, and for a period of ten days after convalescence has become established. Milk is the best food, and should be used if possible. Combined with French Vichy water it can often be taken freely, when by itself it may cause nausea or other disturbing effects. A good rule to follow is to withdraw any food against which the stomach rebels. Besides milk other suitable articles of food are beef tea, mutton and chicken broth, soft-boiled eggs and egg water. Egg-nog and milk punch are also good foods.

When the heart becomes weak no general stimulant is better than milk and whiskey. If whiskey is not tolerated brandy may be substituted. For an adult one-half ounce of whiskey, or a little less of brandy, every three or four hours, is the proper quantity to give in the majority of cases.

When a medicinal agent is called for to stimulate the heart, digestive apparatus and nervous system strychnine should be the first drug chosen. It can be given in doses of one-sixtieth to one-thirtieth of a grain every five or six hours.

The cold bath, cold sponging and water internally are all highly recommended when their use is indicated. Of the coal-tar products acetanilid is preferred by the doctor and is given usually with caffein. Quinin is valuable particularly in malarial districts.

In hemorrhage from the bowel, morphine one-half grain, atropine one-hundredth grain should be at once administered hypodermically, followed by fluid extract of ergot, or ergotin, repeated every hour or two according to the necessity of the case. Cold should be applied to the abdomen also.

Proper ventilation, light, cheerfulness and cleanliness are effective adjuncts that go far toward securing a favorable termination of a case of typhoid fever.

EDITORIAL COMMENT.

THE UNIVERSITY HOSPITAL AND THE PROFESSION.

In a recent number of the Detroit Journal of the Michigan State Medical Society Doctor Beverly D. Harison makes certain objections to our editorial of February, 1905, under the title given above. We beg to assure Doctor Harison that the editorial was not directed against him personally, but against current criticism of the Hospital. Doctor Harison's name was used because he had, as president of the State Medical Society, expressed ideas that are very prevalent, but are not necessarily accurate. We entirely agree with the opinion of the university professor whose letter is quoted. If we had not felt that Doctor Harison's motives were the highest we should not have named him any more than we did any of the gentlemen who wrote so freely for the daily press. While we also appreciate his temperate discussion of a subject that in the hands of others has been most seriously exaggerated, we regret that Doctor Harison thinks our comments and deductions unfair, but in so far as he quotes our words we cannot see any cause for such an impression. He also states that we misquoted him, but does not give the passage. We have not been able to find one, but shall be glad to apologize for and correct any that may be pointed out. Perhaps we have misunderstood some of the passages in the address. We find it difficult to interpret some of the paragraphs in the recent letter. So, we cannot find where we admitted that the material in the hospital is "altogether unsuitable for clinical purposes."

Doctor Harison regrets the mixture of negative and affirmative in our editorial. This was unavoidable in considering a text containing many contradictions—Doctor Harison's address and many public utterances including many of those made by protesting physicians at the hearing before the Board of Regents.

We think Doctor Harison is still in error in believing that "from a material and practical standpoint" those cases are wealthy who can even [?] with self-denial pay for services rendered. Of course our difference of opinion depends on the various meanings attached to such terms as "wealth" and "services rendered" but we think this is a matter that cannot be settled with justice either by those who share Doctor

Harison's views or by those who may share our own. We believe that two other parties are much more concerned—the patient's physician and the patient, and that if these agree that the University Hospital is the place for the patient, others need not concern themselves with the matter.

In saying this we do not mean that we are in favor of gratuitous treatment to wealthy people, but we do say that the number of such people coming to the hospital is small; that even those are used for teaching purposes; that in this way they really pay more. But we do not wish to repeat our former editorial, and we regret that Doctor Harison did not discuss the general propositions laid down there, or advance statistics to disprove the assertions made about the hospital. For the matter has an interest, in our opinion, far beyond any individuals and beyond the University of Michigan—namely, one that concerns all who are interested in medical teaching and in the important field of hospital treatment.

ANNOTATIONS.

INCUBATION PERIOD IN TYPHOID FEVER.

DUFLOCQ and Voisin, in a foreign publication, report the case of a young woman who attempted suicide by swallowing a pure culture of Bacillus Typhosus, which in some manner she had succeeded in procuring. In a moment of repentance the poor unfortunate summoned a physician and unwittingly furnished the medical profession with reliable data regarding the incubation period in typhoid fever, a question which has been hitherto only approximately determined. On the third day after the act the woman was seized with a violent headache which, however, gradually subsided. On the fifth day she suffered from marked anorexia, and on the sixth day was so ill as to be obliged to remain in bed. The temperature on the evening of this day reached 101°, and on the eighth day there was pain in the abdomen, iliac tenderness, a rose-colored eruption, and a positive Widal reaction. The attempt at suicide was frustrated by medical skill, but the idea of the woman was indeed unique, and suggests speculation respecting the probable number of voluntary deaths due to virulent microörganisms.

THE PETOSKEY MEETING OF PHYSICIANS.

THE preliminary announcement of the annual meeting of the Michigan State Medical Society has been issued. This year the gathering will be at Petoskey, and the sessions will continue during three days, the first convening Wednesday, June 28, at 10:30 A. M., under the presidency of Doctor Beverly Drake Harison, of Sault Sainte Marie. Upwards of sixty papers and addresses are listed in the program. The president's address will be delivered in the forenoon of the first day, and will consider "The Present Status of the Medical Profession in

Michigan." In the forenoon of the second day the Oration on Surgery will be delivered by Doctor Frank B. Walker, of Detroit, on the theme of "Surgery and Human Welfare." The Oration on Medicine is announced for the fourth number of the second day, when Doctor Collins H. Johnston, of Grand Rapids, will discourse on "The Administrative Control of Tuberculosis." The Oration on Obstetrics and Gynecology is scheduled for the forenoon of the third day, the orator being Doctor Richard R. Smith, of Grand Rapids, who will discuss the question "Is Gynecology to Remain a Separate Specialty?" Doctor John A. Wyeth, of New York City, will deliver an address on the occasion of the society banquet in the evening of the second day. The exercises of the second day in the Section on Obstetrics and Gynecology will open with a paper by Doctor J. Wesley Bovee, of Washington, on "Ligament Operations for Uterine Retrodisplacements." The officers seem to have exerted special effort to present a literary program calculated to attract, and it behooves each member to appreciate the arduous labor involved by straining a point to augment the meeting.

A NEW CURE FOR DIABETES.

Doctor Silas G. Soules, of New York University, has announced a specific for diabetes mellitus—benzoic acid and its compounds. It should be given immediately preceding each meal, in doses of five to ten grains, all food being prohibited between meals. After continuing this treatment for several weeks, a mixed diet may be resumed gradually. The doctor expresses the opinion that no sugar should be ingested for several months. The discovery is the result of a year's work in search of a remedy for this formidable disease.

MEDICAL NEWS.

A GRIST OF GRADUATES.

The thirty-seventh annual commencement exercises of the Detroit College of Medicine were held at the Light Guard Armory Thursday evening, May 4, 1905, when a class of fifty-two received the degree of Doctor of Medicine. Addresses were made by Reverend Father Francis J. Van Antwerp, Attorney Clarence A. Lightner, and Victor H. de Somoskeoy, valedictorian of the class. Following is a list of the graduates:

Frank B. Allison, Hugh H. Angle, Norman Balfour, Ernest G. Bellinger, William H. Betteys, Lewis E. Bracey, Julian Branch, Clark D. Brooks, Eugene S. Browning, A. Ernest Bruce, Frederick G. Buesser, Geo. C. Chene, Floyd W. Clements, William F. Clute, Berten M. Davey, Herbert L. Eastman, Eugene F. Fontaine, Robert C. Fraser, Philip I. Froude, Dugald A. Galbraith, Samuel S. Hackwell, George

B. Henderson, Neal L. Hoskins, Guy D. Houghton, John S. Jackson, Byron H. Jenne, Azariah K. Jewell, Hubert H. Johnson, Oren G. Johnson, C. Herman Kiehl, David J. Lackie, Ingol M. Law, Harold P. Lawrence, Henry A. Luce, Charles D. Mohler, Vaughan G. Morris, Joseph S. Morrison, Archibald D. McAlpine, Nelson McArthur, Gustave L. McClellan, Joseph A. McGarvah, Zachariah T. Nairin, George O. Pratt, Geo. Wilford Robinson, Clyde C. Slemons, Victor H. de Somoskeoy, Chas. R. W. Southwick, Clarence T. Starker, John D. Stewart, Maitland N. Stewart, Liew A. Traphagen, Geo. W. Trumble, Joseph E. Wellman, Harmon C. Wolfe.

The annual banquet of the class was served at the Hotel Cadillac later in the evening, Doctor Delos L. Parker officiating as toastmaster. Toasts were responded to as follows: "The Professional Man," Reverend John Brittan Clark; "The Board of Trustees," Sidney T. Miller; "The Faculty," Doctor John E. Clark; "The Clinical Professor," Doctor Howard W. Longyear; "The Alumnus," Doctor Channing W. Barrett, Chicago; "The Recent Graduate," Doctor C. D. Brooks.

CHRISTIAN SCIENCE DEFINED AS MEDICAL PRACTICE.

OHIO will not permit Christian Science healers to practice without a medical license. The Supreme Court of that commonwealth lately rendered a decision to the effect that "The giving of Christian Science treatment for a fee, for the cure of disease, is practicing medicine within the meaning of the statutes regulating such practice in this state. The statute making it a misdemeanor to give such treatment for a fee is not interference with the rights of conscience and of worship, and is not on that ground unconstitutional. Legislation prohibiting anyone from treating a disease for a fee excepting such persons as have prescribed qualifications, is a valid exercise of the police power of the state and is constitutional."

THE ATLANTA ANTI-TUBERCULOSIS MEETING.

THE annual meeting of the American Anti-Tuberculosis League was held at Atlanta, Georgia, April 17 to 19, inclusive. The event was a decided success, nearly forty papers being presented upon the various phases of the disease. Physicians were in attendance from every quarter of the United States, and the fact that over three hundred delegates were present is proof of the interest manifested in the society's work. The election of officers resulted in the following selections: President, Doctor R. E. Conniff, Sioux City, Iowa; secretary, Doctor Walter N. Villas, El Paso, Texas. A large number of vicepresidents will be chosen from various parts of the country. A feature of the social function was a real Georgia barbecue at which the carcasses of twenty-four pigs and sheep were roasted. The next meeting of the league will be held at El Paso, Texas.

MINOR INTELLIGENCE.

DOCTOR LOUIS J. HIRSCHMAN, of Detroit, has been appointed consulting proctologist to Harper Hospital.

DOCTOR WILLIAM H. POOLE, of Detroit, has been appointed to a position on the teaching force of the Michigan College of Medicine and Surgery.

DOCTOR JULIUS F. HENKEL, of Detroit, has been promoted from Major-Surgeon to Brigade-Surgeon of the First Regiment of the Michigan National Guard.

BERLIN University, according to recent report, is the largest university in the world, 9,104 students being in attendance, of which 1,111 are taking the medical course.

THE Alumni Association of the Michigan College of Medicine and Surgery of Detroit held their annual clinic at the college building during the week dating from May 13 to 20, 1905.

ON Tuesday evening, May the 2d instant, Doctor and Mrs. Charles D. Aaron, of 712 Jefferson avenue, tendered a reception to the visiting alumni of the Detroit College of Medicine who attended the clinical sessions incident to Alumni Week, an important feature of the Commencement season.

MRS. WEAVERSON, of New York City, a healer, and member of the cult of "Persian Mazdaznan Sun Worshippers," was recently convicted of the illegal practice of medicine, the presiding judge imposing the maximum penalty, a fine of $250. The woman was convicted on evidence furnished by a lady detective.

THE French government has enacted a law to prohibit the payment of insurance on the lives of children under twelve years of age. The passage of the law was instituted by the Académié de Médécine of France and Société Royale de Médécine of Belgium, which organizations extensively discussed the abuses liable to follow the insurance of lives of young children.

THE meeting of the Sixth Councilor District branch of the Michigan State Medical Society—comprising the Clinton, Shiawassee, Genesee and Livingston County Medical Societies—was held at Durand, Michigan, Thursday, May 11, 1905, under the councilorship of Doctor C. B. Burr of Flint. Papers were read by Doctors W. P. Manton, of Detroit; I. H. Neff, of Pontiac; and W. H. Sawyer, of Hillsdale. A banquet was held in the evening.

THE graduating exercises of the College of Physicians and Surgeons of San Francisco were held on the 18th instant. The addresses of the occasion were delivered by Honorable D. M. Delmas and Professor H. D'Arcy Power, the subject of the former being "The Dignity, the Responsibility, and the Duty of the Medical Profession," and that of the latter "The Relation of the Public to the Medical Profession." Classes were graduated as follows: Medical department—19; Dental department—36; Pharmacal department—4.

DOCTOR JOSEPH TABER JOHNSON, of Washington, in reviewing the disastrous effects of gonorrhea, states that, in his belief, if the deaths due to this cause were recorded they would undoubtedly be equal to those produced by typhoid, pneumonia, and tuberculosis. He believes that thirty per cent of the deaths among prostitutes are due to this disease, and that a large number of virtuous women succumb through its effects on the generative organs.

THE efforts of the New York City Department of Health to secure municipal investigation into the cause, and plans for suppression, of the present epidemic of cerebro-spinal meningitis, have met with the unanimous support of the board of aldermen, which has appointed a commission consisting of members of the various medical colleges of the city, and appropriated a sum of five thousand dollars for the extermination of the scourge, if possible.

THE Danish government has issued a new series of postage stamps bearing the head of the late Professor Finsen. The object is to place within reach of the lower classes a means of contributing to the erection of a memorial to the late scientist. The Postmaster-General has also issued four million illustrated postal cards, from the sale of which a sufficient amount will be realized to erect a new sanitarium for the treatment of indigent tuberculosis patients.

THE medical profession of Illinois is engaged in fighting against the passage by the legislature of a bill to regulate the practice of osteopathy. The bill in question extends to osteopaths practically all the privileges of licensed physicians and surgeons, permitting them to practice surgery and obstetrics, and even to prescribe certain medicinal agents. There is at present before the Illinois legislature, besides four osteopathy bills, a measure to repeal the medical practice act and another to prohibit vivisection.

THE Indiana legislature has passed a bill to prohibit the granting of marriage licenses to persons of unsound mind, to imbeciles, epileptics, indigent persons, and to persons afflicted with transmissible diseases. Should the contracting parties endeavor to evade the law by having the ceremony performed outside the state, the marriage will be declared void in the event of their return. A fine of $500 will be imposed upon any person who knowingly solemnizes the marriage of individuals who have not complied with the statute.

INVESTIGATIONS have been made with blank cartridges with the idea of isolating the bacillus tetani, but with negative results. Cultures were made from several of the cartridges and the bacillus aerogenes capsulatus was isolated. Rats, guinea-pigs and rabbits were employed in the experiments and the animals developed characteristic symptoms of tetanus, although the organism itself was not found. The conclusion is, however, that the bacillus of tetanus is present in the wads of certain cartridges, as is evidenced by animal experiments and clinical observations.

MICHIGAN opticians have inaugurated a movement to require examination and license for members of their craft. A bill has been introduced into the legislature, which provides for appointment by the Governor of a state board of examiners to consist of five members who shall receive five dollars per day for actual service and two cents for each mile traveled. Applicants for examination must be twenty-one years of age, must pay ten dollars to the board at the time of making application, and five dollars additional if a certificate is issued, besides an annual license fee of two dollars.

THE Fuerst Bismarck, which was recently launched at Glasgow, has the distinction of being the first ocean steamship to be equipped especially as a sanatorium. The vessel, which is the property of the Hamburg-American line, has a tonnage of 8,600 and is designed in every way to meet the needs of sick and convalescing persons. Doctor Schweninger, who was physician to Bismarck, will have personal supervision of the cruises, and he will be assisted by a corps of able assistants. The ship will begin her first trip on July 6 and the voyage will cover about three thousand seven hundred seventy-three miles.

THE sixth annual meeting of the American Röentgen Ray Society will be held at Johns Hopkins University, Baltimore, September 28, 29 and 30, under the presidency of Doctor Charles Lester Leonard, of Philadelphia. Arrangements have been made for an excellent program and a large attendance is expected. The papers of the meeting for the first day will deal with *x*-ray diagnosis, and those of the second and third days will be therapeutic. There will also be an evening of lantern slides which promise to be extremely interesting. The Belvedere hotel has been selected as headquarters. Doctor Russell H. Boggs, of Pittsburg, Pennsylvania, is secretary.

RECENT LITERATURE.

REVIEWS.

THE URINE AND FECES IN DIAGNOSIS.*

THIS little book is a quite complete compilation of facts in literature on the subjects named. It is in reality only a compilation, as in certain chapters, particularly those devoted to the important subjects of the feces, there is practically no indication that the authors have had much if any real clinical experience with the subject. The same is true of certain portions of the chapter on the urine where the newer tests are recorded. The chapter on the feces is almost entirely given up to the bacteriology of the gastrointestinal canal, and is practically a complete reproduction of Ford's extensive work on this subject. While there is very much of real value for *clinicians* and *practitioners* in Ford's work there is more that is of absolutely no worth. Had the authors given more space to the things that the general practitioner must know about in his everyday work the book would be of inestimable value. A very striking illustration of the nature of the book may be seen by looking over the illustrations, all of which are quite familiar to most of us, and are borrowed from the more elaborate books on this subject. In other words, there is practically no originality manifested, but there is manifested a great effort to bring into the work every new test that has been described within recent years without, however, any trustworthy comments upon them as to their real clinical or scientific value.

*A Practical Manual on the Urine and Feces in Diagnosis. By Otto Hensel, Ph. G., M. D., Bacteriologist to the German Hospital, New York, and Richard Weil, A. M., M. D., Pathologist to the German Hospital, New York, in collaboration with Smith Ely Jelliffe, M. D., Ph. D., Instructor in Pharmacology and Therapeutics in Columbia University; Visiting Neurologist to the City Hospital, New York. In one octavo volume of 334 pages, illustrated with 116 engravings and 10 colored plates. Cloth, $2.75, net. Lea Brothers & Company, Publishers, New York and Philadelphia, 1905.

NURSING IN DISEASES OF THE EYE, EAR, NOSE AND THROAT.*

THIS very useful little book is written primarily for the use of nurses. The general practitioner will find it of use also to him. Antisepsis and asepsis have received particular attention. The method of preparing the various solutions, instruments, and dressings is given. The nurse is told in detail and correctly how to perform her many duties in this branch of nursing. The various diseases of the eye, ear, nose, and throat are simply but sufficiently considered. A brief outline of the anatomy of the region is appended. The book is heartily to be recommended.

*By A. Edward Davis, A. M., M. D., Professor of Diseases of the Eye in the New York Post-Graduate Medical School and Hospital, and Beaman Douglas, M. D., Professor of Diseases of the Nose and Throat in the New York Post-Graduate Medical School and Hospital. The F. A. Davis Company, Philadelphia.

REFERENCE HAND-BOOK OF THE MEDICAL SCIENCES: VOLUME VIII.*

THIS volume was received several months ago. It comes from the hands and heads of some eighty-four contributors. It begins with the consideration of the umbilicus and umbilical cord, takes up the subjects of ureters, urethra, urinary bladder and urine, all of which receive well-deserved attention. Afterward come in order uterus, vaccination, vagina, veins, including their pathology, vital statistics, water, its circulation and filtration, yellow fever and several other subjects of less importance, and the appendix. In the last named section are considered Alaska, arsenic, Asiatic cholera, bacteriological technique, enteroptosis, hemolysis, peritonitis, physicians—their relation to the law, protozoa, skin and its appendages, thyroid gland and yellow fever. This volume also contains the general index, a feature which makes of it the most useful. Taken in all this work is the best epitome of medical science in the English language. It is invaluable in a working library. This volume easily maintains the standard of the earlier numbers.

*By various writers. A new edition, completely revised and rewritten. Edited by Albert H. Buck, M. D., New York City. Illustrated by chromolithographs and four hundred and thirty-five half-tone and wood engravings. William Wood & Company, New York, 1904.

INFANT-FEEDING IN ITS RELATION TO HEALTH AND DISEASE.*

THIS well-known work has been revised and enlarged, and will be found of great assistance to beginners in infant feeding as well as to the large number of those who have not been successful in their previous experience. It reflects a large clinical experience, and is full of practical details of great value. New chapters deal with the important topic of "Milk Idiosyncrasies in Children," "Buttermilk Feeding," "Scurvy," and "Feeding Children Afflicted with Cleft Palate." The theoretic side of the subject has not been so well handled as the practical. The remarks on organized ferments and on intestinal bacteria are antiquated and partly obscure. To speak of lactic acid bacilli as "mysteriously minute bacteroid bodies" shows a curious point of view. However, such weak points are not of great importance, for those who most need the book, young practitioners, should either know their bacteriology or know where to find it in more authoritative form.

The mechanical execution of the book leaves nothing to be desired, and the price is suprisingly low.

*A Modern Book on all Methods of Feeding. For Students, Practitioners, and Nurses. By Louis Fischer, M. D., Visiting Physician to the Willard Parker and Riverside Hospitals of New York City; Attending Physician to the Children's Service of the New York German Poliklinik; Former Instructor in Diseases of Children at the New York Post-Graduate Medical School and Hospital; Fellow of the New York Academy of Medicine, et cetera. Third edition, thoroughly revised and largely rewritten. Containing fifty-four illustrations, with twenty-four charts and tables, mostly original. 357 pages, 5¾ x 8¾ inches. Neatly bound in extra cloth. Price, $1.50. The F. A. Davis Company, Publishers, 1914-16 Cherry street, Philadelphia, Pennsylvania.

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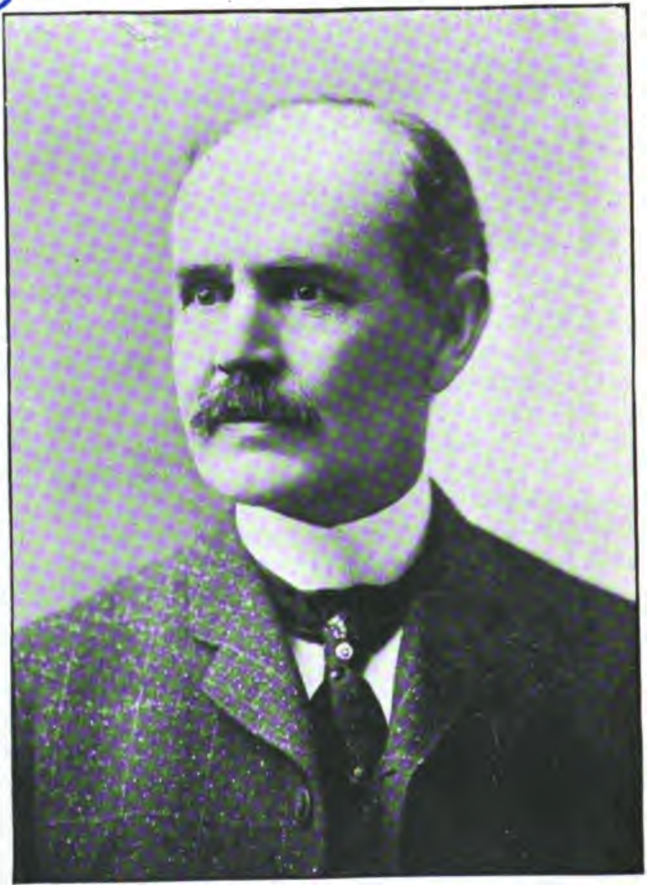

WILLIAM MILAN EDWARDS, M. D.

The Physician and Surgeon

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ORIGINAL ARTICLES.

MEMOIRS.

EVOLUTION IN THE TREATMENT OF FIBROID TUMORS OF THE UTERUS.*

BY W. P. MANTON, M. D., DETROIT, MICHIGAN.

PROFESSOR ADJUNCT OF OBSTETRICS AND PROFESSOR OF CLINICAL GYNECOLOGY IN THE DETROIT COLLEGE OF MEDICINE; GYNECOLOGIST TO HARPER HOSPITAL; PRESIDENT OF THE MEDICAL BOARD OF THE WOMEN'S HOSPITAL, ET CETERA.

THE finished product conveys little information as to the complexity of antecedents which have contributed to its creation. Raphael's Madonna calls forth the admiration of the world, but in it one sees only the portrayal of perfect motherhood, a wonderful harmony of color, a representation of the "divine mystery" exemplifying the loftiest expressions of human art. It does not show the silent influences of the centuries preceding which gave of their best to guide the painter's brush, the toiling pupilage, the strivings to present "an immortal truth in a form that makes a universal appeal," or the disappointments and failures which preceded the final accomplishment. The student on the benches witnessing the operative skill of a master in surgery, takes cognizance only of detail and technique, and sees in the brilliancy of present results nothing of the struggles, disasters and failures of the past.

There is, perhaps, no more interesting page in the history of gynesic ailments than that which deals with the development of the treatment of fibroid tumors of the uterus. From it we learn the gropings in the twilight for the then unattainable, the timid essays toward the light, the disheartening failures, the persistent strivings for the relief of human suffering and the forestalling of death, and of the final triumphs which have made life worth living and brought health and happiness to thousands formerly condemned to lives of misery and anguish.

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*Read at the annual meeting of the SIXTH COUNCILOR DISTRICT BRANCH OF THE MICHIGAN STATE MEDICAL SOCIETY, Durand, May 11, 1905.

From a considerable experience in dealing with this class of growths I have no hesitation in saying that he who is familiar with the history of this subject and expert in the technique of the various operations devised for the removal of fibroid tumors of the uterus is an abdominal surgeon, accomplished and competent to cope with every other intraperitoneal disorder which in our present knowledge permits of surgical relief. For in none of the diseases of the abdominal viscera is a larger judgment, better skill, or more experience demanded than in dealing with this class of tumors.

During the seventeenth century and earlier the polypoid form of uterine fibroids was recognized as a serious disorder, and various internal remedies and astringent douches were recommended for its relief. At the beginning of the nineteenth century the impotence of medicine having been demonstrated, the removal of the growth by ligature of the pedicle began to be practiced. In 1855 Sir James Y. Simpson was among the first (Works, "Obstetrics and Gynecology," page 722) of English surgeons to advocate the division of the pedicle by the scissors or knife—a method which had long been employed on the continent by Dupuytren, Lisfranc and others. But even then these methods, while successful in the hands of the skillful few, were generally considered as extremely hazardous, and operations fraught with such danger as not to be lightly undertaken. While hemorrhage played the principal role in the serious and fatal consequences attending these procedures, a perusal of the histories of the cases presented by Denman and other leading obstetricians of that day, clearly shows that the real danger did not lie so much in the possible blood loss as in the subsequent septic infection incident to a dead and decomposing mass retained within the cervix and vagina. Denman himself says that "the first sign of a successful operation is the scent of something putrefying." If the discovery of Semmelweiss (1847) had done nothing more than to rid the profession of the idea that putrefaction was compatable with surgical success, it would be a monument to his memory greater than could be expressed in words or stone. These operations with the ligature or knife were adopted usually only in those cases in which the growth had distended the cervix and presented in the vagina by a more or less slender stem; the broadly pedunculated and sessile growths were considered extremely difficult of attack and more than dangerous in their removal.

Of the nature of these growths nothing was known until 1843 when Valentin published an account of their microscopical structure (Repertorium," page 10, quoted by West, "Diseases of Women," third edition, 1864). Autopsies undertaken in those dying from this condition soon established a knowledge of the nature of these growths and their locations in and upon the uterus, but nothing beyond the palliative treatment and the ablation of the polypoid forms was undertaken until

1843. The gateway to abdominal surgery opened by the immortal Ephraim McDowell in 1809, shed new light on the adventitious growths of the ovaries and the womb, and surely, although slowly, led to increased familiarity with intraperitoneal conditions. Many an abdomen had been opened for the removal of an ovarian cyst when it was discovered that the tumor was of uterine origin, so that with the advent of antiseptic practice it was natural that attention should at first be turned from ovarian to uterine new-growths.

In 1843 Charles Clay, of Manchester, England, did the first abdominal hysterectomy for the removal of a fibroid uterus. His diagnosis, however, was erroneous, and his patient died, but to him is due the credit for the first performance of an operation which has since saved numerous lives (Noble, "The History of the Early Operations for Fibroid Tumors," published in the "Transactions of the American Gynecological Society," 1899). In 1846 John Bellinger performed the first deliberate hysterectomy, but with fatal result.

It is a curious fact that progress, whether in medicine, the arts or the sciences, almost always takes place in distinct and isolated periods, so that advancement stands out on the page of history like islands in the broad expanse of the ocean. At such times not one but several men are usually grouped together, originators and pioneers whose names are inseparably connected with the period and the achievements of the day.

In 1843 there appeared a galaxy of operators to whose perseverance and untiring zeal the operation of hysterectomy was put on a broader and surer foundation. Of this number only the names of Burnham and Kimball, of Lowell, Massachusetts, and Washington W. Atlee of Philadelphia need be mentioned. But probably the greatest advance in the radical treatment of fibroids of the uterus was inaugurated by the publication of a paper by Koeberlé of Strasborough in 1864, in which the extraperitoneal treatment of the stump was advocated by means of the *serre-neud.*

As already mentioned, the germ theory of infection was unknown to the earlier operators, but they were acutely aware of the dangers of hemorrhage. Even as late as 1882 this was still the *bete noire,* when Sir Spencer Wells wrote: "I feel very hopeful that by the use of the improved pressure forceps the arrest of hemorrhage will be affected much more easily and completely than before." ("Ovarian and Uterine Tumors," 1882, page 510).

Koeberlé's instrument obviated this latter danger to a large degree, and by keeping the stump outside of the peritoneal cavity served to prevent infection. Koeberle's paper attracted the attention of continental and English surgeons to the operation of extirpation of the fibroid uterus and his instrument was for many years employed with success. More than a quarter of a century afterwards the *serre-neud* was in use at the Samaritan Hospital in London, in the treatment of these cases, and I have personally removed many fibroid uteri by its use.

In 1880 Hegar of Freiburg further perfected the operation of hysterectomy by the introduction of the elastic ligature for constricting the cervix uteri or the pedicle of the tumor. This for a time superceded, especially in Germany, the use of the *serre-neud.*

In 1880 Schroeder still further advanced the operation by adopting the intraperitoneal treatment of the stump. This raised the operation of hysterectomy to its highest level. The original procedure, or some modification of it, is the operation selected and practiced at the present time by the majority of surgeons.

These radical operations, however, while teaching important lessons,—the knowledge of structure and the tolerance of organs to manipulations, the pathology of disease and the improvement of technique, —are destructive, so that after all is done and the lesson learned the surgeon is often still unsatisfied with the inadequacy of the work, in many cases, which come to his hand. In a paper published two years ago I said: "Many women still suffered from operations, although in other ways, often as severely as from the original malady. Radicalism had done its best, but with the limit reached it was quite natural that the most prominent operators from their accumulated experience should hesitate and turn conservative. Amussat had performed myomectomy as early as 1840, not, however, with the idea of conserving the uterus but as an expedient. He was later followed by Washington Atlee and many others who proved the possibility of conservative work."

Enucleation of subperitoneal and interstitial tumors of the uterus with the idea of saving the organ was first performed by A. Martin of Berlin in 1874. The operation was, however, looked upon as of doubtful utility and the dangers from hemorrhage and necrotic processes taking place in the tumor bed have been pointed out as contraindications to the carrying out of this method. Experience has taught that these fears are largely imaginary, but the question is still open as to what extent fibroids situated in the wall of the uterus may be enuncleated with benefit to the patient. It has been argued that while two or three growths may be safely removed, the enucleation of a large number is not only fraught with serious immediate danger but may prove of little lasting help, since by the removal of detectable tumors, the tendency of the tissues to this form of degeneration remaining, opportunity is offered for the development of a new crop, so that the last end of the patient becomes worse than the first. It is at present too early to speculate on the possibilities following this conservative work, but I see no reason why in properly selected cases cure should not be the rule rather than the exception. As an early advocate of the conservative operation, I have watched these cases with much interest. In my own experience I have removed from one to thirty-two fibroids from the various portions of the uterus, and thus far with the happiest results.

In the foregoing brief account of the evolution of the treatment of uterine fibroids I have made no mention of several methods which have been more or less prominently before the profession for some years. In

1880 Hildebrant of Konigsberg returned to the older method of treatment by ergotine, giving the drug hypodermically; in 1876 Trenholm of Montreal and Hegar brought out the operation of öophorectomy for the relief of these tumors; in 1880 Hoffmeier of Berlin undertook the tying of the uterine artery with the expectation of reducing the size of the growth and thus relieving symptoms; in 1880 Cutter, then of Boston, treated fibroids by galvano-puncture; in 1881 Apostoli of Paris introduced the electrical treatment by means of the high potency current. All of these methods may be considered as passing phases in the history of the development of treatment; some of them may be rarely indicated and prove of value, while others are positively harmful and even dangerous to life.

32 ADAMS AVENUE WEST.

SOME REMARKS ON THE COURSE AND MANAGEMENT OF ACUTE MASTOIDITIS.*

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IT is intended in this paper not to consider the diagnosis and treatment of acute mastoiditis in detail, but to discuss some of their more important points. It is impossible to say at just what point in the course of an acute purulent middle ear disease the mastoid cells become involved. Evidence of their infection does not show itself immediately. It is safe to say, however, that in all cases of acute suppurative ears the antrum is affected and it is wise to consider that such cases demand most careful observation and treatment. The physician should recognize in caring for acute ears that he has under treatment a disease not confined to that part of the tympanum seen through the speculum, but one which involves the attic and mastoid antrum and lies in closest relationship to the cerebral structures.

Some acute inflammations of the tympanum and antrum run their course with symptoms referable to the ear alone to heal kindly with little treatment and no impairment of hearing; others, notwithstanding early observation and skillful attention, run courses essentially acute with extensive involvement of the mastoid and neighboring regions, and require operation and protracted treatment. The reason for differences in course are sometimes obscure, sometimes plain, and it is the duty of the physician to inform himself as well as may be concerning them in order that he may not only render his patient the greatest service, but that he may safeguard himself in event of a protracted course and unsatisfactory termination.

In attempting to make an accurate diagnosis of the patient's condition and to offer a prognosis of the duration and probable outcome of the disease there are to consider—

(1) The condition of the patient.
(2) The character of the mastoid.
(3) The character of the infection.

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If these three points were taken up in order of their importance, the order would be, in my opinion—

(1) The character of the infection.
(2) The character of the mastoid.
(3) The condition of the patient.

However, to consider them in the former order, it is needless to say that the better the condition of the patient the more easily he will throw off infection and the more satisfactory will be his recovery; and conversely the worse his physical condition, whether due to exposure, et cetera, or to the disease of which the ear condition is a complication, the greater the importance of the ear disease.

The character of the mastoid is certainly of importance in this connection. Unfortunately methods of determining the propable structure of the mastoid are somewhat unreliable. Briefly, it may be said that dolicocephalic individuals are more likely to have large pneumatic mastoids than are brachycephalic ones, in whom diploetic or sclerosed mastoids are more common. Again, mastoids with low tips and prominent marking have a larger cell structure than others. However, the most careful measurements and examinations often lead one astray. The larger the mastoid cells the more easily the pus is disseminated through the bone. The larger and more prominent the mastoid the thinner the inner table and the greater the danger of cerebral involvement.

To have definite information concerning the nature of the infection is without doubt of the utmost importance. One set of statistics from the New York Eye and Ear Infirmary states that there come to operation of all cases of—

Pure streptococcus mastoids, 86%.
Pure staphylococcus mastoids, 66%.
Pure diplococcus mastoids, 10%.
Mixed streptococcus mastoids, 92%.
Mixed without streptococcus, 33%.

One can feel much more at ease, therefore, about his case and rely with a greater degree of safety upon palliative measures if he knows that it belongs to the class of which ninety per cent escape operation rather than to the class of which ninety per cent require it. Nevertheless it is a very rare thing to have referred to the otologist by the general practitioner a case of mastoiditis of which a culture has been taken. It is the part of wisdom, therefore, in all cases of suppurating ears to learn the exact nature of the infection, not only for the above reasons, but in order to be able in a way by means of this information to anticipate and recognize at the earliest possible moment conditions that may arise. This is to a degree possible, for in my experience it has seemed that the different infections, especially in pure culture are prone to run courses somewhat typical.

The streptococcus infection, for instance, is recognized as a dangerous one. It is not widely described, however, as running a course which may be considered at all characteristic. It is an infection which attacks early the attic structures. The patient has frequently several hours of severe pain with but slight change demonstrable in the tympanic membrane. Later a moderate degree of swelling appears. If a paracentesis be performed at this time the ear will be found to contain a clear serum. This serum is often extremely profuse and may be perfectly sterile or may contain a very few streptococci. In pure streptococcus infections it is often several days before the discharge becomes purulent. It may even remain clear although mastoid symptoms are pronounced, its true character being learned only at the time of the mastoid operation. Such cases are prone to have considerable pain after the paracentesis has been done, oftentimes more intense after the paracentesis than before. Indeed, I have become very suspicious of serous ears and am always on the lookout for the streptococcus and for serious complications. The streptococcus is prone to attack the mastoid and is one not likely to exhibit local symptoms until comparatively widespread change has taken place. It is likely to spread insidiously to the deeper structures and to cause perisinuous and neck abscesses.

The staphylococcus infection on the other hand generally runs a different course. It attacks preferably the structures of the lower part of the tympanum. Therefore, after a few hours pain there is seen more change in the tympanic membrane. Early paracentesis gives relief from pain and allows the escape of a purulent discharge. Danger of infection of the mastoid is not so great and if it does occur it is not so widespread or so marked. It is more often confined to the antrum and immediately surrounding parts and tends more often to spontaneous cure and if operated on heals more readily. It is more likely to form circumscribed epidural abscesses over the antrum roof which may be present indefinitely without symptoms.

Again, in this connection the pneumococcus infection is of importance. It runs a course which when typical is quite different from any of the others. It makes its appearance as an acute purulent middle ear which after a few days clears up considerably or possibly entirely. The hearing returns almost or quite to the normal and signs of inflammation disappear from the tympanic membrane. After some days during which the patient seems to be making satisfactory recovery mastoid symptoms present, and this often without any recurrence of the ear disease. At this time, with the mastoiditis well developed and patient seriously ill, the hearing may be perfect. Operation in such a case often shows the bone soft and the pneumatic cells filled with minute pockets of pus scattered through the bone. The pockets are often so small and so widely separated that it is most difficult completely to eradicate them. This makes the after treatment tedious and reoperation sometimes necessary. Such a frank clearing up of all ear symptoms in a staphylococcus or even in a streptococcus infection would be sufficient evidence that not only the condition of the ear but also that of the mastoid was progressing favorably. In the pneumococcus infection, however, it means only that the ear inflammation is subsiding and is no evidence that the mastoid is not steadily progressing toward operation.

In order to illustrate some of the statements that I have made I wish to report three cases that are at present under my care at the University Hospital.

Case I.—L. C. C., student, age twenty-two, of Osceola, Wisconsin. Patient was seen for the first time February 3, 1905. He gave a history of having had many earaches with deafness but without discharge, as far as he knows, during childhood. His present trouble began with probable head cold and la grippe about a month ago. One week later the ear began to ache and a few days afterward to discharge. The discharge was at first clear serum which soon became purulent. Within three or four days the discharge ceased. From that time on he steadily improved and thought himself well, but came to consult a physician to be reassured.

Examination showed a small amount of pus in the external auditory canal. The tympanic membrane was reddened somewhat and bulging in its posterior superior quadrant. There were redness and drooping of the superior canal wall in the depths immediately external to the tympanic membrane. The mastoid was slightly tender to pressure over the tip and markedly so farther back over the region of the lateral sinus. Light palpation gave one the idea that the right mastoid was smoother than the left. Careful inspection showed the absence of the right postauricular fold. The patient sat with the head bent slightly to the right. Hearing for the whisper was at one foot. Temperature 99°; pulse 120. Paracentesis was done and the patient was advised to undergo an immediate mastoid operation. February 6 he entered the University Hospital for that purpose. Examination showed the same condition as formerly except that there was considerably more edema over the mastoid than at the first consultation.

The operation was performed under ether. Free paracentesis was made. The usual mastoid incision was prolonged somewhat backwards over the posterior area of tenderness. The soft tissues were found to be about an inch thick and to bleed freely. Upon retraction of the periosteum the mastoid cortex showed several bleeding points in the neighborhood of the antrum, through some of which pus appeared. Microscopical examination made later showed pure culture of streptococcus. The mastoid was of the medium pneumatic variety. The antrum was found by chiselling through sclerosed bone at the depths of a little over an inch and considerably above its usual level. It contained a small amount of granulation tissue and pus and was curetted. The mastoid tip was made up of three cells filled with pus which was followed almost to the stylomastoid foramen. Pus was also found in several small cells lying over the lateral sinus and in minute pockets far forward in the root of the zygoma. The pneumatic structure was obliterated as nearly as possible, and free communication established with the middle ear. The dura was laid bare for a small area just above the horizontal semicircular canal. The wound was irrigated, packed with iodoform gause, and two silk sutures taken in its upper half.

The patient has made an uninterrupted recovery. The ear was dry three days after the operation and one week later his hearing for the whispered voice was ten feet. It is now normal. He has been discharged to the out-patient department, well.

This patient was a medical student, the son of a physician, who although he had observed his own case rather carefully had no idea that he had anything particularly wrong with him. He had had a head cold but had not been very sick, in fact he had not been confined to his bed. His ear had bothered him but little and his mastoid condition had not attracted his attention. He had not observed that it was tender and indeed it was not markedly so. Yet here was a man going about his business with a mastoid filled with pus of a most dangerous character and of an extent sufficiently serious to threaten his life. The edema over the mastoid and beneath the tip and the bleeding points upon its cortex found at time of operation show that the tendency was toward perforation downwards into the neck tissue as well as externally. Unnecessary delay would certainly have resulted in abscess formation in the deep neck tissues if not in more serious complications.

Case II.—M. H. R., student, age twenty-two, of Plymouth, Michigan. Patient was seen for the first time February 6, 1905. He gave a history of no previous ear trouble. For two weeks he had been suffering from la grippe, and then began to have pain in the right ear which was much easier next day. Examination of the ear showed some injection in the superior half. The various landmarks were clearly visible, and no bulging was seen. It seemed at this examination as if the ear was not seriously involved.

Thorough examination of the patient showed nothing significant of trouble in other parts of his body. He was put to bed and a laxative prescribed. Temperature 101° on February 7. Temperature at 4 A. M. was 104.6°. The patient had had no pain or other symptom pointing toward his ear and felt perfectly well. The hearing remained as before—ten feet for the whispered voice. Although the previous earache had quite disappeared and the hearing had not decreased, there was an increased redness in Schapnell's membrane in the centre of which was a clear blister the size of the head of a glass pin.

This was sufficient evidence that the ear was becoming involved and because of it and of his temperature a free paracentesis was made through the bleb. Severe pain immediately set in and persisted for several hours. A few minutes after the paracentesis the ear began to discharge a clear serum. Culture made at this time grew very slowly but showed a pure streptococcus. This discharge was very profuse, being sufficient to drop from the lobule. Two days later the ear discharged a mass of pus which was also pure streptococcus. From this time on the discharge was of this character.

February 9: The mastoid tip was tender. During this time the temperature remained about 100.5° to 101°. Unsuccessful attempt was made to keep the patient in bed, frequent irrigation of the ear was continued.

February 10: The tenderness disappeared.

February 11: A spot of tenderness appeared far back in the region of the emissary vein. The antrum and tip were not at all tender. Except for this small area of tenderness the patient seemed to be getting better. Extention backward was suspected and he was at once sent to the University Hospital. Here he was put to bed, the ice coil applied and the ear irrigated every two hours.

February 12: The discharge was profuse and purulent. Temperature 101°. The spot of tenderness over the sinus was more sensitive. Tenderness in other parts of the mastoid had entirely disappeared. The patient felt quite well.

February 13: Condition remained the same. The posterior superior canal wall was somewhat more edematous in the neighborhood of the tympanic membrane. Temperature 100°. On account of the edema of the canal wall and the spot of persistent tenderness over the sinus, operation was advised.

February 14: The operation was performed under ether. Free paracentesis. The usual mastoid incision and retraction of the periosteum revealed the mastoid cortex apparently healthy. Removal of the cortex showed comparative slight change in the mastoid proper. The antrum was filled with pus and granulations. The body of the bone was hyperemic and soft but contained but little pus. The tip was composed of small cells filled with pus. It was completely removed as far as the median plate. It was evident that the main source of trouble had not been reached so a second incision was made at right angles to the first and backwards a distance of an inch and a half. Further removal of the cortex and cell structure showed several small cells filled with pus the removal of which laid bare the lateral sinus. This was seen to be apparently healthy. Cellular structure extended as far back as the temperooccipital suture and was everywhere infected. The infective material was removed as thoroughly as possible, the wound irrigated, packed with iodiform gause and the second incision sutured.

February 15: The temperature fell to normal and since then the patient has made an uneventful recovery.

February 25: The ear contained a trace of moisture, the hearing for the whisper was eight feet and was steadily improving. The mastoid was granulating nicely and he was discharged to the out-patient department.

This case exhibits some very interesting features. The first examination of his ear after he had passed a night of very severe pain, showed but slight change, his hearing was surprisingly good. Indeed at this time as change in his ear was so slight, and as his temperature, which had been carefully recorded by a medical student, had been climbing, he was suspected of having an ambulatory typhoid. Then, too, after his night of pain all sense of discomfort left him, but his temperature reached an elevation of 104.6°. This might then be considered septic, yet it was two days after the paracentesis before the discharge became purulent. The mastoid tenderness was not greater than is often seen in cases of uncomplicated otitis media of acute character. The first sign significant of serious trouble was the spot of tenderness back over the sinus. It was immediately certain that extension backwards was taking place into areas that could never be drained through the tympanum. It was especially significant in this case as it was directly over the emissary vein, a sign not to be ignored, as this vessel is not uncommonly an avenue of infection in otitic pyemia.

Case III.—M. C. M., printer, aged eighteen. Patient was seen for the first time February 15, 1905, while he was convalescing from la grippe. Five days before the right ear pained him for the first time. Discharge began two days later and has continued. Symptoms of la grippe have subsided.

Examination disclosed that the external canal contained pus and was red and swollen in its deepest part. The mastoid was slightly tender over the antrum and tip, but what is more significant, was sensitive to pressure at a point two and a half inches back of the posterior attachment of the auricle and on a level with the tip of the mastoid. This point was well back on the occipital bone. The patient was at once transferred to the University Hospital for operation, but as it was impossible for him to be operated on at once he was put to bed, a free paracentesis was done, the ice coil applied and frequent irrigation ordered. I was much surprised the next morning to learn that the tenderness had entirely disappeared from the mastoid although it still remained in the same degree as formerly at the point over the occipital bone. The purulent discharge from the ear was so exceedingly profuse as to fill the concha half an hour after the ear had been irrigated. His temperature, which had been 101.4°, fell to normal. He feels perfectly well. He was demonstrated as a case that showed every symptom of improvement but was undoubtedly proceeding to operation as the discharge was too profuse to be considered as coming from the tympanum alone. Nevertheless on account of the marked improvement in the patient, a few hours delay was allowed.

February 17: As the discharge showed no sign of abating and as the spot of tenderness over the occipital persisted an immediate operation was advised.

The operation was performed under ether. The usual mastoid incision and retraction of the periosteum showed an apparently healthy cortex. The mastoid cavity was of the large pneumatic cell variety. The body of the bone showed but slight pathological change. The antrum contained freely bleeding granulations and was curetted. The root of the zygoma was composed of small cells all filled with pus and was completely removed. The mastoid tip contained two or three cells containing pus and was removed as far as the median plate. Pus was now seen oozing from a point in the floor of the cavity. Careful exploration with a soft probe revealed a row of cells leading backwards. A second incision was then made backward at right angles to the first, and just below the level of the emissary vein. Cells filled with pus were found extending far back to a point in the occipital bone corresponding to the area of tenderness noticed before operation. At this point considerable pneumatic structure was discovered in the occipital bone. This was thoroughly curetted and the cerebellum laid bare for a moderate area. The dura was apparently healthy. Everywhere the edges of the bone wound were smoothed off. Special care was taken in this respect of the cavity in the occipital bone in order to secure good union with the soft tissues and so render impossible any further collection of pus in this location. The wound was then irrigated, and the edges of the second incision were carefully approximated and sutured.

February 19: The patient felt well, had no pain or discomfort. Temperature at 4 P. M. had reached 101.8°. The dressings were changed and it was found that pus had burrowed beneath the sternomastoid muscles into the deep tissues of the neck. This pocket was emptied. The temperature fell to normal and since then the patient has made a recovery uneventful but slow as for several days the wound remained sloughy, clearing up satisfactorily after a week of daily dressings.

This case, the most extensive of the three, was seen only after his mastoiditis was well developed. From the outstart with his spot of tenderness far back on the occipital bone there was no chance of his recovery without operative interference. It may be remarked in this connection that extension as far back as the occipital bone in mastoiditis and the discovery of infection pneumatic cells in this region is exceedingly rare. The surprising thing about his case is the apparently remarkable improvement after the proper palliative treatment was begun. Had one not had other similar cases well in mind one might have waited and hoped until perforation had taken place internally and bathed his cerebellum with pus. It is to be remembered that when pneumatic structure is present in the occipital bone the inner table is thinner than the outer and if pus accumulates here under any pressure that perforation internally is the rule.

In considering these three cases, one is struck by the fact that they are remarkably similar in several respects. In the first place they have the same etiological factor, that is, that they all occurred as complication of la grippe. They were all due to the same germ, a streptococcus growing in chains of from three to six and possessing the same cultural characteristics. It is a strange coincidence that they are all right-sided cases in males between the ages of eighteen and twenty-two. Again, they all show the characteristics of the streptococcus infection.

(1) That the discharge was at first serous and later became purulent.

(2) Early examination showed but slight change in the tympanic membrane although the patients had had severe pain.

(3) Extensive change had taken place in the mastoid before local symptoms of importance had appeared.

(4) Cases I and III had neck abscesses.

(5) Case II had a perisinuous abscess without symptoms. Case II, which was observed carefully from the onset, was diagnosed as streptococcus before the report of the culture was received.

They show, however, some noteworthy differences. Case I smoldered along slowly for a month without symptoms referable to the mastoid, yet when operated on it showed less pathological change than either Case II or Case III which, although they had been running but a few days, were very extensive. This was due not to differences in the virulence of the infection nor to differences in condition of the patients but rather to differences in the nature of the mastoids. In Case I the pneumatic spaces were much smaller and the spread of the infection much slower.

This series, short as it is, is long enough to show plainly the difficulty of estimating at their true value the various early symptoms of mastoiditis, or judging from them the amount of pathological change that has taken place in the bone. Without going too deeply into the subject it may be worth while to consider briefly a few of the most important.

I cannot urge too strongly the unreliability of the temperature as an index of the extent of the mastoid disease, especially in the early stages. A high temperature may be present, especially in children with the disease confined to the tympanum alone, while again the brain may be bathed with pus without variation of a fraction of a degree from the normal.

One symptom significant of extension is pain over the mastoid and side of the head. This when present is important. In these three cases it was absent. Although these two symptoms are much spoken of by practitioners and discussed by authors they are of less importance than others that have received less general attention.

Tenderness to pressure over the mastoid may be regarded as one of the reliable symptoms of mastoid involvement. The interpretation of this tenderness calls for a certain degree of judgment; first because in all cases of otitis media of an acute nature tenderness to pressure may be demonstrated directly behind the canal and along the anterior surface of the tip; second, because there may be so-called physiological tenderness. This may be learned by comparison with the other side. Tenderness over the antrum, the body of the bone and the posterior surface of the tip is pathognomonic of mastoid involvement. The farther back the tenderness lies the more extensive may be considered the disease process. Very generally the point of greatest tenderness corresponds to the area of greatest bone distruction as seen at the time of operation, or at least to the area of greatest pressure. This is well illustrated in Cases II and III. It is to be noted, however, that in sclerosed mastoids with thick cortexes tenderness may be absent even when extensive disease of the bone is present.

A second symptom pathognomonic of mastoid disease, and one upon which too little stress is laid, is the drooping of the posterior superior canal wall just external to the tympanic ring. This condition is evidence of periostitis resulting from infection of those cells lying in or just back of the posterior canal wall and is significant of extension downwards from the antrum. In no case where this sign was present have I failed, upon operation, to find pus in the mastoid.

A third sign of value is the disappearance of the postauricular fold. This small fold lying immediately behind and below the auricle at its attachment disappears as the first evidence of edema.

Finally, in all cases of profuse purulent discharge which shows no evidence of abating even in the absence of all signs pointing toward the mastoid one must conclude that other structures deeper than the tympanum are affected.

Briefly, to consider a few points in the treatment of the acute condition. If the case is seen early an attempt to abort the attack should be made. The patient should be put to bed, a cathartic prescribed and liquid diet ordered. The first step in local treatment should be to establish drainage as perfect as possible by free incision of the tympanic membrane. The usual paracentesis is insufficient as the edges soon become agglutinated. The most satisfactory incision is made after the method advocated by Dench who advises not only a free incision through the area of bulging but also the continuation of this incision outward along the superior canal wall. This divides the reduplications of the structures in the upper part of the tympanic cavity, causes considerable depletion of the tissues and allows better drainage. At this time a culture of the discharge should be taken. If the discharge is serous, irrigation may be omitted provided drainage is good and pain decreases, otherwise frequent irrigation with normal salt solution should be ordered. To control the pain applications of heat or cold, according as to which is the better borne by the patient, may be made over the mastoid. These applications should be made continuously for not more than twenty-four hours. Later more satisfactory results are secured if they are made say, two hours on and one off according to the progress of the case. Such applications are made solely for the comfort of the patient and must not be supposed to have any influence upon the course of the disease. They should be removed at least an hour before the visit of the physician as immediately upon their removal the sensitiveness of the mastoid is diminished due to the benumbing effect of the cold rather than to any change in the mastoid condition.

On no account should the applications be continued longer than forty-eight hours. They simply mask the course of the disease without having any beneficial effect; indeed as critical observers as the elder Knapp have discarded them entirely, preferring to rely upon rest in bed and drainage as the most valuable palliative measures.

In practically all the acute cases enough relief is obtained to justify one in continuing such treatment for several days before resorting to operative measures. It not infrequently happens that the patient does very well for several days or as long as he remains in bed but has a return of symptoms as soon as he begins to move about. Provided that free drainage has been secured such a return of symptoms points to a mastoid involvement of some extent. If a second paracentesis does not give immediate and permanent improvement it will be plain that further palliative measures will be useless. A drooping posterior canal wall and persistent tenderness are clear indications for operative interference. It is often difficult to advise operation after the most acute symptoms have subsided and while the patient is feeling well except for his spot of tenderness, but experience has shown that once tenderness has been present without diminishing for forty-eight or sixty hours over the body of the bone and the posterior surface of the tip that operation offers less risk than delay. With early operation properly performed the risk is slight and cure with complete restoration of hearing is the rule. Delay increases the gravity of the operation necessary later, the probability of dangerous complications with sequels of permanent pathological change in the intratympanic structures with chronic otorrhea and consequent diminution in hearing.

One has but to recall the intimate relationship between the tympanum and brain separated as they are by a layer of bone the thickness of a sheet of paper and frequently perforated to recognize the ease with which extension may take place through the tympanic roof and to appreciate the extreme danger of unnecessary delay. The large per cent of brain complications in neglected cases and the discovery at operation of extensive disease not previously suspected impresses one with wisdom of early operation.

Concerning the operations, I would say that simply opening and draining the mastoid cells is no longer deemed sufficient. Infected cell structures should be removed as thoroughly as possible and free communication established with the middle ear. This includes removal of the root of the zygoma and the mastoid tip, two areas not generally attacked in the early operation. The root of the zygoma is composed largely of small cells communicating freely with the antrum and is generally involved early in the course of the disease. Although the rest of the operation may have been performed well, failure to remove these cells is the cause of seventy-five per cent of the recurrence after operation for acute mastoiditis. Where this has not been done it not infrequently happens that after long and unsatisfactory after treatment the mastoid heals upon the sequestration of a part of this area. In those cases which have healed satisfactorily but which later break down with formation of a sinus leading deeply into the mastoid, caries is usually demonstrable at the zygomatic root. The mastoid tip if allowed to remain is the cause of the greater part of the remainder of the recurrences. Since I have made it a practice to remove both the root of the zygoma and the tip I have had no recurrences after the operation in the acute condition. Removal of the tip as far as the median plate not only gives the patient a greater security against further trouble but a better cosmetic result for following its removal the depression in the mastoid is flatter and less noticeable.

Following the operation the ear should dry up in the course of a few days to a week. It is not infrequently dry at the first dressing. The function of the ear is to hear and the treatment of acute mastoiditis cannot be considered entirely successful unless the hearing can be restored to the acuteness possessed before the onset of the disease.

THE WORK OF THE MICHIGAN STATE BOARD OF REGISTRATION IN MEDICINE.

BY WALTER H. SAWYER, M. D., HILLSDALE, MICHIGAN,
MEMBER OF THE BOARD.

THE law known as the "Chandler Medical Act" came into force in 1899. Previous to that time there had been no organized body intrusted with the supervision and restriction of the practice of medicine within the state. Frequent efforts had been made to draft a satisfactory law but it had met with so much opposition from the different schools that it could not be passed. Michigan bore the stigma of having degraded standards of professional acquirement and for this reason became the dumping ground of other states.

This condition of low standards prevailed when the State Board of Registration in Medicine came into legal existence. While the law of necessity conferred the right to practice upon all those who at the time of its passage had complied with the previous law, and who met its formal requirements, it placed with the Board the power to raise standards by intrusting to it the determination of competent professional attainment.

This was a long step in the right direction, and was followed by another and very important addition in the amendment known as the "Nottingham Act." By this improvement and its interpretation by the Board, it has been possible to make the present standard of professional acquirement equal to, or better than that of any state in the Union, and also it has made it possible for Michigan to take a leading and important part in bringing about a reciprocal agreement with other states.

The present legislature has enacted a law which makes it possible for students matriculated in recognized colleges, who have passed the first two years of scientific work, to appear for examination in those fundamental courses and get a credit which shall be honored by the Board at the final examination, if presented within three years, with the necessary credentials. This measure was prompted by a request from the students in the medical colleges of the state, which request seemed reasonable and had the Board's approval. It relieves the student from a burden during the last two years and permits undivided attention to be given to the practical work.

In the main, the medical legislation has been satisfactory in that it has accomplished all that was expected. Some difficulty has been experienced in punishing offenders because justice court juries would not convict, in spite of the most convincing evidence of guilt, the local sentiment in favor of the defendant being too strong to overcome.

The legislature is asked to enact an amendment to the law, increasing the penalty and bringing the offence within the jurisdiction of the circuit court, and thus avoiding the tedious and often unsatisfactory litigation to enforce its provisions.

In January, 1904, the Board summoned to appear before it a number of licentiates, who were responsible for indecently suggestive advertisements in the state papers, to show why their licenses should not be revoked. They appeared and through their attorneys objected to the constitutionality of the law under which the Board was acting and enjoined it from proceeding further. These cases are still in the courts, awaiting decision.

The Michigan Board is the only one thus far that has established a minimum standard of preliminary and technical requirement which is definite. No subject has had more serious attention than the preparatory education necessary to entrance upon the study of medicine. The "Nottingham Act" gave the Board the right to dictate, within limits, what this qualification should be, and in accordance with the law, a schedule of preliminary requirement was prepared. The law recognizes as sufficient qualification, the certificates from such high schools, academies, and colleges as comply with the conditions imposed by the Board. In cases in which an applicant for registration cannot satisfy the Board of this qualification, he may appear before the Board of Preliminary Examiners, chosen because of special fitness for this duty, by the Board of Registration, and give an opportunity to evidence before this auxiliary Board that his preparation meets the demands. Every applicant must file with the Secretary of the State Board of Registration in Medicine his verified credentials, in detail, upon blanks furnished for that purpose, together with his diploma from a recognized medical school, before he is admitted to examination in medicine. This supervision of preliminary training has necessitated greater care in the acceptance of students by many of the colleges.

To comply with the growing demand for more careful preliminary training and yet abridge the time necessary to a liberal arts degree plus a medical degree, some of the schools are offering combined courses, or giving credit in the medical course for satisfactory work done in such subjects as may be included in the curriculum of both literary and medical schools. While educators are not in accord as to the policy which entrusts any part of the medical course to other than medical schools, yet there is a tendency of the colleges to give credit for good courses furnished by the liberal arts schools; besides, the ranks of the profession can be abundantly recruited by those who are willing to devote full time for baccalaureate and medical degrees. The time is coming when a liberal arts degree will be a requisite, and it is a question whether the combined course is a step forward.

There has been much discussion as to what should constitute a good diploma. While under the law a diploma is used only as an identification credential, yet that diploma must be from a school whose equipment and curriculum conform to the standard established by the Board. While there is a difference of opinion as to what this equipment and curriculum should be, the Michigan Board has insisted that a diploma must have a fixed value, and to this end has established a standard of minimum requirements which has the approval of the leading colleges and educators of the country. Most of the medical schools are seeking recognition and are cheerfully conforming to the standard required. Each school asking for recognition is furnished a blank upon which is detailed the length of course, the equipment, and the number of hours devoted to each subject, including laboratory and clinical work. As far as it has been possible, a personal examination is also made by some member of the Board. This work has been done without fear or favor and must be a factor for good.

At a recent meeting of the Association of American Medical Colleges, a standard curriculum was adopted which is almost identical with that required by the Michigan Board. This action will materially assist in placing all medical schools on a good basis. The work has now gone so far that any medical school which does not comply with the minimum standard of the State Licensing Boards will have little reason for existence.

This Association also accepted a schedule of preliminary requirement such as the Michigan Board had demanded, and it provided for the inspection of schools. Of the one hundred fifty-four medical colleges in the United States, sixty-six have membership in this body and its action will be very influential in raising standards.

The American Confederation of Reciprocating and Licensing Medical Boards, an organization brought into existence largely through the efforts of the Secretary of the Michigan Board, who is also Secretary of the Confederating Boards, has energetically and effectively labored to establish mutual interchange of licenses between the states. One by one they are dropping into line and accepting the conditions imposed. The Confederation has formulated and adopted two rules, known as Qualifications 1 and 2, which are as follows:

QUALIFICATION I.

"That a Certificate of Registration showing that an examination has been made by the proper Board of any state, on which an average grade of not less than seventy-five per cent was awarded, the holder thereof having been at the time of said examination the legal possessor of a diploma from a medical college in good standing in the state where reciprocal registration is sought, may be accepted, in lieu of examination, as evidence of qualification. *Provided,* that in case the scope of the said examination was less than that prescribed by the state in which registration is sought, the applicant may be required to submit to a supplemental examination by the Board in such subjects as may have been covered."

QUALIFICATION II.

"That a Certificate of Registration, or License, issued by the proper Board of any state may be accepted as evidence of qualification for reciprocal registration in any other state. Provided the holder of such certificate had been engaged in the reputable practice of medicine in such state at least one year; and also provided, that the holder thereof was, at the time of such registration, the legal possessor of a diploma issued by a medical college in good standing in the state in which reciprocal registration is sought, and that the date of such diploma was prior to the legal requirement of the examination test in such state."

Qualification I is essential to any reciprocal agreement, while Qualification II is desirable and is conceded in most instances. Some states have for a longer time had more rigid laws and are not willing to relinquish the consequent advantage. However, when there is a mutual exchange of courtesies under the first condition, an acceptance of the second condition can be expected to follow. We now have reciprocity with Indiana, Wisconsin, Iowa, Kansas, Nebraska, Kentucky, Virginia, and Maryland; and partial reciprocity with Illinois, Ohio, New Jersey, and Maine, and it is reasonable to expect that the time is not far distant when a license in one state shall have full recognition in all.

The day is past when the practice of medicine can be entered upon without the most thorough preparation. The better schools have labored in competition with diploma mills to raise the standard of professional requirement and are now seeing the fruits of their persistent effort. A great many influences have been at work to accomplish the rapid progress of the past few years. The association with well trained men has had its effect not only upon those who have not had the benefit of better equipment, but also upon the laity, who are constantly increasing their conception of the ideal medical man. But beneath it all is the real advancement made in the science of medicine. There are so many more fixed points from which to take bearings that it is no longer a groping in the darkness of mystery, superstition and empiricism. Every new fact has broadened the field of medicine and made increased demands upon its devotees.

PENETRATING WOUNDS OF THE EYEBALL.

By GEORGE SLOCUM, M. D., Ann Arbor, Michigan.
DEMONSTRATOR OF OPHTHALMOLOGY IN THE UNIVERSITY OF MICHIGAN.

Penetrating wounds of the eyeball are so frequently caused by a flying fragment, that in all cases where such wounds occur, a foreign body should be assumed to be present until examination has shown their absence. Inflammatory reaction or effusion of blood generally renders the media so cloudy that the ophthalmoscope gives little assistance in diagnosis. Even after inflammation has subsided, the usual clouding of the vitreous renders a view of the interior of the eye unsatisfactory, or an opaque lens renders it impossible. Where the eye is not destroyed, and the media fully clears, there being no symptoms of irritation in either eye, it may safely be assumed that there is probably no foreign body present.

Generally the presence of a foreign body gives rise to severe irritation and inflammation.

The taking and recording of the vision of each eye should never be omitted in making examinations of affections of the eyes, for the reason that progress may be watched and one's self protected from unjust criticism.

The history is of great importance in making a diagnosis. Sometimes a probe carefully inserted under proper antiseptic and aseptic precautions may serve to locate the substance, but it should be used with great caution.

Since the discovery of the wonderful power of penetration of the Roentgen rays, their employment in locating foreign bodies in the eye, has proven as valuable as their use in other departments of surgery. Various methods have been employed and ingenious apparatus have been devised for localization, some of which are extremely satisfactory, it being possible to locate the body with a very slight possible error.

Where no apparatus is obtainable, an exposure may be taken (1) with eye directed straight forward; (2) in extreme elevation; (3) extreme depression; (4) extreme abduction; (5) extreme adduction. Because these motions are rotary around the vertical or horizontal axis, the excursions laterally and vertically, and the degree of alteration in the position of the body, will decide whether it is in the anterior or posterior section or whether laterally or vertically situated and its position thereby approximated quite closely.

If the body happens to be of steel, or iron, the lifting of the tissues of the eye by a powerful magnet will be positive evidence of its presence.

The prognosis varies with the presence or absence of infection, the position of the wound in or at a distance from the dangerous ciliary zone, the position in which the body has lodged and the possibility of its removal. In general, all foreign bodies, if left in the eye, sooner or later lead to its destruction or to inflammation in the other eye. The only structure which is exempt from this statement is the lens, which will generally tolerate the presence of a foreign body indefinitely, though it usually becomes opaque from the traumatism.

The treatment should, in most cases, consist in removal or enucleation. In some cases, it should be expectant. No attempt at removal should be made when the nature of the wound renders the loss of the eye inevitable, but immediate enucleation should be done.

The method of removal varies with the location of the object. The use of a magnet for the removal of particles of iron or steel has been tried with varying success, for many years, but the invention of the powerful giant magnet has enabled surgeons to save eyes, as in the case to be cited, which must otherwise have been enucleated for the safety of the other eye.

With the giant magnet, it is usually best when practicable, to remove the steel through the wound of entrance or, if this has healed, through a puncture made externally at the site of the scar. When this is not best, the fragment may often be drawn through the suspensory ligament, coaxed up over the edge of the dilated pupil and extracted from the anterior chamber by incision through the cornea. Where this cannot be done, the particle may be drawn to a favorable position within the sclera, causing it to bulge, and there removed through a puncture made for the purpose.

When the foreign body is nonmagnetic, the problem is more difficult and the prognosis correspondingly less favorable. The method of removal may be, if in the anterior chamber or iris, through an incision in the cornea, taking a piece of the iris with it, if necessary. If in the lens, by removing the lens if cateractus or if the lens absorbs by removal of the foreign body from its place of lodgment in the vitreous or anterior chamber.

When located, in the posterior part of the eye, it may sometimes, but not often be removed with a delicate forceps or scoop through the point of entrance or through a scleral incision. After removal, the eye should be treated as indicated in other penetrating wounds. In case the foreign body cannot be removed, the prognosis is so unfavorable, if it is allowed to remain, that enucleation should be done at once to remove the extreme danger to which the other eye is exposed from sympathetic inflammation or irritation.

When the diagnosis is doubtful and some vision remains a delay of the operation is advisable while keeping the patient under careful scrutiny for evidences of sympathetic disease. Persistence of inflammatory reaction and failing sight are indications that long delay is unnecessary and even dangerous, especially after a period of three weeks, when sympathetic inflammation may occur at any time. Sympathetic inflammation has occurred even after enucleation, when the operation had been delayed for a considerable time after the accident.

When the radiograph shows that the body has passed entirely through the eye, and found lodgment in the orbit, or its bony walls, enucleation because of the foreign body is not indicated. In this situation, it may often be allowed to remain until inflammatory reaction necessitates removal or its absence renders interference unnecessary.

In penetrating wounds, when no foreign body is present, the usual surgical precautions with particular emphasis on antisepsis should be taken. Included structures should be replaced or excised and the wound closed by sutures, and by a conjunctival flap when possible. When sutures cannot be used, a compression bandage may approximate the margins. Atropine—four-grain solution—should be used freely and iced compresses as indicated. Calomel in small doses is generally helpful.

When the progress is not satisfactory and rapid, should cyclitis develop or should the vision be hopelessly lost, for the safety of the other eye, it is better that the injured eye be sacrificed.

When sympathetic inflammation is once established, enucleation should not be done if there is any sight remaining in the injured eye, as it may be the better eye when the inflammatory reaction has finally subsided.

* * *

Following are the reports of three cases treated in Doctor Parker's clinic at the University Hospital:

Case I.—A man, age thirty. Occupation, not given; nationality, American. Date of examination, October 3, 1904.

Patient entered the hospital because of failing vision—oculus dextra—and anxiety as to the welfare of the other eye. Six years ago a piece of steel pierced the right eye, causing considerable inflammation, which was treated at the time with apparent cure. Last December the patient noticed that the vision was failing in the right eye and that the color of the eye was changing to a darker hue.

Upon examination the right iris was found to be dark-brown, the left, blue or gray, the difference between them being very marked. The scleral wound could be brought into view by the patient turning the eye sharply down and in. Excepting for the change in the color of the iris, there was scarcely anything abnormal in the appearance of the eye. By means of the *x*-ray examination the steel was located lying in the sclera, near the site of the scar.

October 13: The steel was removed from the sclera at the site of the wound by an incision about four millimeters long, which was closed with a conjunctival stitch, this being all that is necessary in small wounds of the sclera. There was some inflammatory reaction, which subsided gradually, and on October 24 the stitch was removed.

Patient was discharged October 27 with the eye in good condition, instructed to report progress, and told the principal symptoms of sympathetic irritation. On December 18, he wrote that vision was not as good in the right eye as before the operation, but that the eye was comfortable.

January 2: Sight—oculus dextra—gradually failing. Now has little more than perception of light. Light does not affect eyes and the vision of the left eye is good.

January 16: Patient considers the eye well, and is highly gratified not to have to wear an artificial eye.

April 23: He reports that the eye continues well.

* * *

Case II.—A man, age twenty-two. Occupation, laborer; nationality, American. Date of examination, January 19, 1905.

This patient was struck in the right eye with a pair of ice tongs five days previously, the sharp point passing through the upper lid into the eye at the upper corneal margin.

Examination showed the upper half of the cornea torn loose and the iris lacerated and exposed; the lens was opaque and there was some purulent exudation. The wound in the eyelid had healed by first intention, leaving almost no scar. The eye was not infected. It had been treated antiseptically and with cold applications and atropine.

It being obvious that to save the eye was impossible, enucleation was done and an uninterrupted recovery followed.

Patient was refracted January 27, when his vision was found to be 15/20. A correction of spherical plus .50 combined with cylindrical plus .25 axis, 30 degrees, gave him 15/15.

* * *

Case III.—A man, age twenty-five. Occupation, marine engineer; nationality, American. Date of examination, January 6, 1905.

On September 5, 1904, patient was struck in the left eye by a fragment of iron. He did not know the size of the piece, but felt sure it entered the ball. The vision was largely lost at once, "a mist appearing before the eye." The eye was bandaged for twenty-four hours and atropine was used; no further treatment. Healing of the sclera gradually followed, since which time the eye has been comfortable. He has had no trouble with either eye since the injury, until last night, when he complained of some pain in oculus dextra before going to sleep.

Examination shows a discolored scar on the sclera about five millimeters back from the inner margin of the cornea and slightly below the horizontal meridian. The iris is considerably darkened in color, as in the first case outlined, otherwise the external appearance is normal. On dilating the pupil, oblique illumination showed a slight projection into the interior of the eye through the ciliary body not far from the site of the external wound. Ophthalmoscopic examination showed floating and fixed opacities of the vitreous. Lens not affected. A good view of the fundus unattainable. With his injured eye, he could count fingers in a very limited field. Right eye vision was 15/50 minus.

January 7: An *x*-ray plate showed the foreign body distinctly located in the anterior part of the globe.

January 9: An attempt was made to diagnose the character, situation and presence of the fragment, with the new giant magnet which had been ordered for this case. This causing pain, and definite elevation of the sclera, there was no longer any doubt but that a piece of iron or steel was present. Before operating, the patient was prepared for an enucleation which might at any minute become necessary if the eye was greatly injured during the operation.

January 11: Further examination by the *x*-ray, using a localization apparatus devised by Mr. Willey, located the iron quite near the site of the wound in the ciliary body.

This case possessed further unusual interest in that, when on January 12 an attempt was made to give a general anesthetic after prolonged and careful effort by Doctor Kane, it was impossible to produce surgical anesthesia. It was therefore not until January 16 that the steel was removed, after several unsuccessful attempts at dislodgment. This was done under cocain anesthesia, the operation producing considerable pain, but the patient possessing great determination and fortitude was able to assist materially by holding his eye in a favorable position for the use of the magnet. Thorough antisepsis was observed. Before using the magnet the sclera was pierced at the site of the scar, cutting vell into the ciliary body. The attraction of the magnet drawing the sclera towards it, showed definitely that the iron was two or three millimeters below and towards the temporal side of the eye from the point of entrance, which position, as well as the probably encysted condition of the fragment, accounted for the delay and difficulty in its extraction.

The wound was closed by conjunctival sutures and the eye treated as after cataract operation. A rapid recovery followed, atropine being freely used and the eye examined twice daily. Though not entirely well, the patient was discharged January 30, and referred to his family physician for further treatment. He was fully warned and instructed as to the dangers of sympathetic irritation or inflammation and as to the symptoms which would serve to warn him of their imminence.

January 27: Patient's vision was taken and was 15/50 as before, refraction showing a myopic astigmatism of minus 3 axis 180 degrees, which gave 15/15 minus.

Further interest attaches to this case from the fact that the fragment not only pierced the sclera in the ciliary region, but that it involved the ciliary body itself and even then failed to set up cyclitis, which almost invariably follows such wounds, and in that a destructive inflammation did not follow the further necessarily quite severe traumatism of the efforts at removal. It also showed what can be done with a magnet in such accidents, particularly in recent cases where the foreign body is still unencapsulated.

In this case, the patient may eventually lose his eye, but his great tolerance to trauma encourages the hope that he may never find it necessary to wear an artificial eye.

February 7: Doctor Armstrong wrote that the patient was doing well and that there were no signs of irritation or failure of vision in the other eye, and on May 30 he further reported that the patient was well and at work.

TRANSACTIONS.

WILLS HOSPITAL OPHTHALMIC SOCIETY OF PHILADELPHIA.

STATED MEETING, FEBRUARY 1, 1905.

DOCTOR GEORGE ROBINSON, PRESIDING.

DOCTOR HELEN C. UPHAM read a paper calling attention to the absence of examinations for color-blindness in the motormen and conductors on suburban trolley lines. It was pointed out that many of the accidents occurring could be prevented by proper color signals recognized by the motormen. The colors red and green, especially, she said, should be recognized by them. The tests should not be made with wools or colored miniature lights, but as has been pointed out by Doctor Charles A. Oliver, they should be made under the actual conditions on the road and under atmospheric conditions. On many of the suburban lines a speed equalling that of the steam cars is attained. The cars rush through thickly populated neighborhoods with their human freights at the mercy of those who may or may not know the danger signals, no tests having been previously made. She believed that these men should be subjected to the same examination for acuity of vision and colors as is required of steam railways, ships, et cetera..

In the discussion, Doctor J. Hiland Dewey reminded the members that many of the accidents on a road occurred not as a result of color-blindness but by ignoring of the danger signals through carelessness of those who are responsible. Doctor John T. Krall thought that no matter if some employes were careless, and caused loss of life, care should be taken in selecting only those who had full acuity of vision in each eye and normal color perception in both eyes. The examination should be made only by those who are known to have normal color perception. He believed that the whole subject of examination of trolley car employes was a very important one.

Doctor James A. Kearney presented a case of so-called traumatic conjunctivitis; also a case of ulcer of the cornea in which dilation of the pupil had not been obtained until eserine had been used for a week followed by atropine.

Doctor Dewey exhibited five pieces of wood which he had removed from the orbit of a child. Each piece measured about a centimeter long and ranged from one to three millimeters in diameter. The only history obtainable was that the child had run a stick against the eye while playing. The pieces were found situated between the eyeball and the outer wall of the orbit. They were deeply imbedded in the orbital tissues. At the time of presenting the paper the eye was in a healthy condition and the orbital wound had healed nicely. In the discussion, Doctor Robinson commented on the similarity in length of the various pieces, and the remarkable amount of wood which had been stored in the orbit of such a young subject. Doctor Dewey promised a full report of the case at a later date.

ORIGINAL ABSTRACTS.

PEDIATRICS.

BY ARTHUR DAVID HOLMES, M. D., C. M., DETROIT, MICHIGAN.

DISTURBANCES OF DIGESTION IN INFANTS RESULTING FROM THE USE OF TOO HIGH FAT PERCENTAGES.

HOLT (*Archives of Pediatrics*, January, 1905) draws some practical conclusions. It is evident that disturbances of digestion are often due to the physician's and patient's fondness for rich milk. I believe one of the failures in feeding from the milk laboratory has been the too high fat, it being so easy for the physician to increase the fat percentages, particularly if his mind has been filled with the idea that thereby the chronic constipation is likely to be overcome. The author says no arbitrary standard can be fixed, but if the percentage is raised much above four per cent for any length of time disturbances are almost certain to follow. I have never seen any advantage and often seen much harm from raising the fat above four per cent. The bad results may not be at once apparent, but are almost certain to come later. If symptoms of either gastric or intestinal indigestion appear the fat should be lowered much below the normal.

TREATMENT OF PNEUMONIA IN CHILDREN.

HAWKINS (*Pediatrics*, December, 1904) says: (1) Never give any medicine which will disturb the stomach. (2) Give the patient plenty of fresh air, cool water to drink, and do not allow the child to be smothered with clothing. (3) Treatment: For this we have four leading indications—(a) to control the excessive fever; (b) to allay nervousness and secure a proper amount of sleep; (c) to check the cough at first when it is dry and irritative and to encourage it when it is loose; (d) support the strength (but above all do not overtreat). A few drugs are indispensable, given for a definite purpose, and every three or four hours is often enough to give them by the mouth. For the control of the temperature, water, warm or cold, is the best, using the nervous system as a guide rather than a thermometer. Cough should be looked after with judgment. The author advocates the administration of drugs by steam inhalations. They are of value in relieving cough and in promoting bronchial secretion. Local applications to the chest should be very limited, as a mild mustard paste, camphorated oil, et cetera, and the light jacket in some cases. Stimulation is required, particularly near the latter part of the attack, and reliance must be placed upon cardiac and respiratory stimulants, using hypodermics if necessary.

RHEUMATISM IN CHILDHOOD.

Burnet (*British Journal of Children's Diseases,* September, 1904) says rheumatism is looked upon as a comparatively simple disease, but as a matter of fact it is very complex in its clinical manifestations, and differs widely in its clinical manifestations as one passes from childhood in adolescence and again into adult life. The hereditary factor is important in its production. Tonsillitis and pharyngitis should be more frequently regarded as rheumatic. The author thinks that some cases of pneumonia are due to the specific virus of rheumatism. Psoriasis and rheumatism are related. Appendicitis of children he says is unquestionably sometimes of rheumatic origin. Children of rheumatic heredity do not often present any definite manifestations of the disease. They are often nervous, irritable and quick-tempered, and when the nervous systems reach a certain point they are associated with muscular movements which increase in severity until true chorea is established. Rheumatism in children is best combatted by the administration of aspirin or salicylate of sodium in large doses. To a child of five years ten grains of either remedy may be safely given at four-hour intervals for several days. The heart requires special attention and frequently cod-liver oil is indicated with the antirheumatic remedies.

MODERN PEDIATRICS.

Theodore Von Escherich (*American Medicine,* January, 1905), traces the various steps which have developed pediatrics into a science. He divides child life into

(1) Infanta; (a) first week of life; (b) nursing period (first year of life); (c) milk teeth period (second to fifth year);
(2) Childhood (sixth year to puberty);
(3) Age of puberty.

Under these heads he discusses the physiologic principles involved in the development of the child and the diseases incident to each period, and emphasizes the fact that the pediatrist should make himself familiar with the therapy suitable to each period. The greatest difference between the therapeutic problems of the pediatrist and those of the internist lies in the overwhelming importance and development of prophylaxis which includes the constant and careful watching over the child's life, especially during the first period of growth, because disease with which medical care generally begins is to a certain extent a feature of preventive care, an interruption disturbing the normal process of development.

TREATMENT OF WHOOPING-COUGH.

THERON W. KILMER (*Journal of the American Medical Association*, December 10, 1904) calls attention to a new method of treatment of whooping-cough and shows some excellent results from the use of a silk elastic abdominal belt of sufficient tightness to lessen the distress and covering the patient from the axilla to the hips. In a series of eighteen cases, unselected, his results are surprising, especially as regards vomiting, and are as follows: Out of eighteen cases there have been but six failures to benefit cough, and only one failure to benefit vomiting, that is, positive good effect on coughing is seen in sixty-six per cent and positive good effect on vomiting is seen in ninety-four per cent of the series. These brilliant results warrant the physician in giving this method at least a fair and impartial trial.

LOBAR PNEUMONIA IN CHILDREN.

B. ABRAHAMS (*British Journal of Children's Diseases*, April, 1904) says lobar pneumonia in children from the age of two and upwards is a disease of frequent occurrence and as it differs somewhat from its appearance in adults it is quite frequently overlooked. It is most commonly present in the spring and attacks those children who are debilitated. The onset is usually sudden and the symptoms are usually nervous or gastrointestinal. A child coming down with lobar pneumonia will have high temperature, dry, burning skin and may have convulsions, with or without vomiting and diarrhea, with no physical signs as yet appearing in lungs, and at this stage it may be mistaken for scarlet fever. Lobar pneumonia in children is quite frequently apical, and these cases are often ushered in by head symptoms and thus may at first be mistaken for meningitis, but the temperature is usually much higher in the former. On oscultation tubular breathing can always be heard, together with high pitched râles. The very loud râles of bronchopneumonia are not heard, and the random distribution observed in bronchopneumonia is never found. The temperature of lobar pneumonia rises abruptly and continues high until the crisis. The dyspnea and cyanosis is not as marked as in bronchopneumonia unless both lungs become affected, and cough is not as marked a symptom in the apical form.

ORTHOPEDICS

BY IRA DEAN LOREE, M.D., ANN ARBOR, MICHIGAN.
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THE TREATMENT OF CLUB-FOOT: ARE THE MORE EXTENSIVE CUTTING OPERATIONS NECESSARY?

B. E. MCKENZIE, B. A., M. D., Toronto (*Journal of Orthopedic Surgery* for January, 1905). His notes are based on a series of four hundred patients varying in ages from infancy to forty-six years. He believes better results are obtainable from manipulative measures than from the more extensive cutting operations even in the adult cases. He considers the Phelps open operation less objectionable than those depending upon the removal of bone, but adds that his experience teaches him that no satisfactory reason can be given upholding its performance. He contends that varus is the most difficult element to overcome in attaining complete correction and not the equinus. He does not cut the tendo-Achillis but uses it for the great mechanical advantage in correcting the varus.

With young infants he advises nothing by the surgeon until the child has entered the second year. During the first year the foot should be manipulated by the mother or nurse to correct as much as possible the varus, but no bandages or braces should be used. Surgical procedures are started when the child begins to walk, which in most cases is during the early months of the second year. He gives various means and methods for correction and devices for retaining the parts in place. A very simple one is a common shoe with the outer sole extended from three-fourths to one inch, and very much thicker along this border.

OTOLOGY.

BY R. BISHOP CANFIELD, A. B., M. D., ANN ARBOR, MICHIGAN.
PROFESSOR OF OTOLARYNGOLOGY IN THE UNIVERSITY OF MICHIGAN.

THE MASTOID OPERATION: INDICATIONS THEREFOR IN ACUTE SUPPURATIVE OTITIS MEDIA WITHOUT MASTOID SYMPTOMS.

CHEVALIER JACKSON, M. D. (*Laryngoscope*, May, 1905), advises posterior drainage in all cases of acute suppurative otitis media in which the discharge does not abate after six weeks; and reports twenty-two cases with good results. He also reports five cases in which permission to operate was not obtained and fatal or serious results followed.

The author maintains that opening of the mastoid is justifiable in acute purulent otitis media in the absence of symptoms of mastoid involvement under one or more of the following conditions:

(1) When the discharge shows no signs of abatement after eight weeks, more or less, as judgment may indicate, usually less in streptococcus infection.

(2) When there are general symptoms not otherwise accounted for.

(3) When the social condition of the patient makes it certain that the ear lesion will become chronic from neglect.

(4) In violent suppurations which threaten the life.

(5) When drainage through the canal becomes hazardous, as in swelling of the canal.

(6) When patients are to be separated from surgical attention.

(7) When cerebral symptoms are present, although drainage seems ample.

Objects to be gained by early opening of the mastoid when mastoid symptoms are absent are:

(1) To cure patient promptly.

(2) To prevent chronic otorrhea with its attendant dangers.

(3) To prevent occurrence of chronic perforation.

(4) To prevent mastoid empyema.

(5) To place patient's life out of danger of intracranial infection by other than mastoid ways.

(6) To preserve the hearing.

(7) To prevent incurable tinnitus.

LARYNGOLOGY.

By WILLIS SIDNEY ANDERSON, M. D., DETROIT, MICHIGAN.
ASSISTANT TO THE CHAIR OF LARYNGOLOGY IN THE DETROIT COLLEGE OF MEDICINE

THE ULTIMATE RESULT OF CAUTERIZATION OF THE LOWER TURBINAL, WITH THERAPEUTIC SUGGESTIONS BASED UPON HISTOLOGICAL FINDINGS.

JOSEPH L. GOODALE (*Boston Medical and Surgical Journal*, December, 1904) gives the results of a histological examination made into a series of cases which had been previously cauterized for swelling or hypertrophy of the lower turbinals, and which had reported later with a recurrence of nasal obstruction. He summarizes the histological phenomena as follows:

"(1) Caustic applications to the nasal mucous membrane may cause a loss of the columnar ciliated epithelium, with a replacement of this by cells of a squamous type.

"(2) Such applications may cause an obliteration of the canaliculi in the basement membrane.

"(3) Immediately below the cauterized mucous membrane, new connective tissue may be formed, which extends downward to a depth dependent upon the intensity of the trauma.

"(4) The contraction of the tissues which is observed clinically to follow caustic applications is due to the contraction of this new-formed connective tissue, and the consequent compression both of the lymph sinuses, and of such cavities as the lumina of blood-vessels and glands.

"(5) Repeated superficial applications of caustics tend to the formation of connective tissue immediately beneath the epithelium, which by its contraction may constrict the lumen of the ducts of the glands, and lead to cystic dilation of the latter. This phenomenon may contribute to a subsequent return of the nasal obstruction. Such applications become progressively of less avail, owing to the relatively impervious barriers presented by the pavement epithelium and compact fibrous tissue immediately beneath."

The clinical deductions from the above study are too long to be satisfactorily abstracted, but are valuable as indicating the conditions in which the cautery can be safely used. It also points out the unfortunate results of cauterization.

A CASE OF ETHMOIDAL MUCOCELE.

Doctor E. J. Moure (*Revue Hebdomadaire de Laryngologie, d'Otologie et de Rhinologie,* January 7, 1905) reports an interesting case of ethmoidal mucocele in a young man of eighteen. His history was negative. Four years previously he fell, striking on his face. This injury was followed by nasal obstruction of the left side, which increased and was accompanied by swelling and broadening of the root of the nose. The breathing through the right side was not as free as formerly. There was no pain or hemorrhage. The examination, besides the external enlargement, showed slight exophthalmia outward of the left eye, without disturbance of vision. Palpation revealed the separation of the nasal bones by the pressure of the tumor. Examination of the left nasal fossa showed at its upper portion a reddish, smooth tumor, streaked by a few vessels, and resembling closely a nasopharyngeal fibrous polyp. The inferior meatus was free. The nasal septum deflected to the right. The tumor was immobile. No prolongation into the nasopharynx was discovered by posterior rhinoscopic, or by digital examination.

Transillumination showed the frontal and maxillary sinuses to be equally transparent.

A probable diagnosis of fibro-sarcoma of the anterior ethmoidal cells was made. An external operation was performed and the tumor was found to be a cyst filled with a colloid fluid which flowed out in great abundance. The bones were resected, the sac removed, and the cavity packed with iodoform gauze. Healing took place promptly with complete relief to the patient. The cyst, about the size of a hen's egg, was covered by a bony shell and incompletely divided by bony partitions.

The author calls attention to the rarity of such large ethmoidal cysts, and to the importance of the ocular symptoms in the majority of cases where the anterior ethmoidal cells are involved. The diagnosis of these unusual tumors is difficult, but a preliminary puncture of the growth will determine whether they are cystic or not.

Moure advocates the external operation as a safer procedure in these cases.

THE ANTRUM OF HIGHMORE: THE REMOVAL OF THE GREATER PART OF ITS INNER WALL THROUGH THE NOSTRIL, FOR EMPYEMA.

OTTO T. FREER (*Laryngoscope,* May, 1905) describes an operation suitable in cases of chronic empyema in place of the more radical Caldwell-Luc. The operation is performed by the aid of cocain and adrenalin. The anterior two-thirds of the inferior turbinal is removed, then the outer wall of the inferior meatus is penetrated by a trephine attached to the cable of an electric engine. Several cores are drilled out until nearly the whole of the anterior two-thirds of the inner wall of the antrum is cut away. Rhodes' tonsil punch is used to trim the edges. Sufficient space is obtained to enable one to see the interior of the antrum, to curet the walls, or remove polypi as is necessary. Permanent drainage is obtained. The antrum is packed with subnitrate of bismuth lint. Later the patient is taught to wash out his own antrum. A case is reported where this operation proved very satisfactory.

THE SIGNIFICANCE OF TUBERCULOUS DEPOSITS IN THE TONSILS.

GEORGE B. WOOD (*Journal of the American Medical Association,* May 6, 1905) strives to determine in his paper, as nearly as possible, the relative importance of the tonsillar tissues of the throat as portals of entrance for a general tuberculous infection. To arrive at a definite conclusion, it seemed necessary to ascertain the truth concerning certain fundamental questions.

(1) Are tuberculous lesions produced more easily in the tonsils than in other portions of the gastrointestinal tract?

(2) Does tuberculous adenitis of the neck have the starting point in the tonsils?

(3) What is the importance of tuberculous cervical adenitis as an etiologic factor in systematic or pulmonic infection?

"From clinical data collected from literature, and from postmortem examinations which I have made, it is evident that in cases of pulmonic phthisis secondary tuberculous infection takes place more readily in the tonsils than in any other part of the upper respiratory tract."

Doctor Wood concludes as follows:

"The tonsillar tissue of the throat, because of its peculiar anatomic construction and its topographical relations, is more liable to become infected by tuberculosis than any other part of the upper respiratory tract. In nearly all cases of advanced pulmonary phthisis the faucial tonsils become inoculated. In about five per cent of hypertrophied pharyngeal tonsils some form of primary tuberculosis will be found. Primary infection of the faucial tonsil is a rarer condition.

"Tuberculous adenitis in the cervical lymphatics develops in the majority of cases from infection originating sometimes in the faucial tonsils, but more frequently in the pharyngeal tonsil.

"The tubercle bacillus is probably unable to pass through the tonsils without having first overcome the vital resistance of the tonsillar tissue.

"The danger of systemic or pulmonic infection resulting from a tuberculous lesion in the tonsillar tissues of the throat is about equal to that of tuberculosis of the cervical lymphatics. The lesion to be expected as a resultant infection from the broken-down glands of the neck is a miliary tuberculosis of the lungs. Further than this possibility, tuberculosis of the lymph glands of the neck is no more dangerous than a localized tuberculous lesion in any other portion of the body.

"The tonsils are more resistant to the action of bacterial toxins than ordinary lymphoid tissue."

DERMATOLOGY.

By WILLIAM FLEMING BREAKEY, M. D., Ann Arbor, Michigan.
CLINICAL PROFESSOR OF DERMATOLOGY AND SYPHILOLOGY IN THE UNIVERSITY OF MICHIGAN.

ANOTHER SIGN OF INHERITED SYPHILIS: SYPHILITIC ULCER OF THE UMBILICUS IN THE NEWBORN.

Hutinel (*La Syphilis*) has been seeking some early reliable sign of inherited syphilis that shows the disease in latent cases before appearance of coryza or skin lesions, and in his service at l'Hospice des Enfants Assistés where about four thousand newborn babies are brought annually, and where the question of their being syphilitic had to be promptly determined with reference to nursing and separation, he had large opportunity to study the doubtful cases, and he describes a manifestation to which he has been calling attention since 1900. He had noticed in several cases, a lesion of the umbilicus which he at first took to be a simple infection, but specific manifestations followed so often that he feels that the lesion itself is a manifestation of syphilis. He cites various other cases of which he gives a careful account of this umbilical lesion.

There is no tendency to abscess formation. The mass is firm, indolent and feels like a lardaceous infiltration, which shades off gradually into healthy tissue. He has never seen a peritonitis caused by this leison. In from twelve to fifteen days the process ceases to spread, the swelling subsides, the redness fades but an ulceration remains, often reaching through a fistulous opening into which a probe passes to quite a depth. This ulcer resists local treatment, and after it has healed, other manifestations appear, as coryza, fissures of the lips, papules, et cetera.

In hospitals these babies frequently die, and a gummatous ulceration of the navel is found, specific lesions in the bones, spleen, liver, et cetera—to verify diagnosis. There is no disturbance of the general condition, no acceleration of pulse, or rise of temperature.

The author states that nonspecific infections of the umbilicus in the newborn are more common than the syphilitic lesion. When seen at the beginning the simple infections would never be mistaken for the gummatous ulceration in the typical case, but there are times when he considers it wise to wait for a confirmation. He does not consider the presence of this gummatous ulcer of more value than the majority of other signs of inherited syphilis, but it does constitute a new sign which should be added to those heretofore recognized, its chief importance being due to its early appearance. It is rare that autopsy fails to show the syphilitic nature of the umbilical lesion. An incision of the lesion showing the gumma, and a study of other organs generally removes all doubt. Lesions more characteristic in the liver and spleen and less often the kidneys and testicles are conditions, which, while not constant are very frequent.

NEUROLOGY.

By DAVID INGLIS, M. D., DETROIT, MICHIGAN.
PROFESSOR OF NERVOUS AND MENTAL DISEASES IN THE DETROIT COLLEGE OF MEDICINE.
AND
IRWIN HOFFMAN NEFF, M. D., PONTIAC, MICHIGAN.
ASSISTANT PHYSICIAN AT THE EASTERN MICHIGAN ASYLUM.

SPINAL CORD DEGENERATIONS IN ANEMIA.

J. MICHELL CLARKE, in *Brain* (winter, 1904) has an article "On the Spinal Cord Degenerations in Anemia." The author states that from a clinical standpoint, anemia may be associated with degeneration of the spinal cord in at least three ways: (1) It may distinctly precede the spinal changes for a longer or shorter time. (2) It may accompany them from the first, and proceed *pari passu* with them. (3) It may appear late in the course of the cord affection, just as it often occurs in the later stages of any chronic illness.

The clinical history of five cases is given. The writer believes that this series of cases shows that the spinal degeneration, which occurs as a secondary change in profound anemia, begins in the posterior columns, and is first shown in the cervical and upper dorsal regions of the cord. The point is emphasized that in certain cases, clinical symptoms may be absent and the lesions in the cord not even visible at postmortem, but can only be seen on microscopical investigation. The author believes that there is sufficient reason to put cases, such as he describes, in a group separate from those described by Collier, Putnam, Taylor and others and designated as "subacute, combined sclerosis," and "diffuse degeneration of the spinal cord."

The article is a noteworthy attempt to classify the cord symptoms found in anemia. The author points out that these changes are found in forms of anemia due to blood destruction.

In conclusion, the author takes care of another possible grouping, namely, those cases which seem to combine the features of the two groups in presenting both profound anemia and widespread cord degeneration, by leaving them in a group by themselves, pending further investigation.

INTRACRANIAL TUMOR.

JAMES COLLIER, in *Brain* (winter, 1904), has an article on "The False Localizing Signs of Intracranial Tumor." The object of the paper, as stated by the author, is to show: (1) That local signs appearing late in the course of intracranial tumor, where general signs alone have preexisted, are often of false portent. (2) The relative frequency with which local signs have been due in this series of cases to the presence of vascular lesions, meningitis, hydrocephalus, local spreading oedema of the brain, secondary deposits of new growth, and posterior degeneration. (3) That the absence of usually accepted local signs during the early days of illness in intracranial tumor is, in itself, a most important localizing indication, confining the disease to the supratentorial region. (4) That true localizing signs at one time present may later become concealed or undemonstrable owing to the development of other signs, and that in cases which come under observation for the first time late in the disease, diagnosis may be difficult, erroneous, or impossible.

The author bases his results upon one hundred sixty-one consecutive cases of intracranial tumor. The paper is eminently scientific and practical, and the careful grouping of the cases is to be commended.

THE CURABILITY OF PARESIS.

CHARLES L. DANA (*Journal of the American Medical Association*, May 6, 1905), has an article on "The Curability of Early Paresis." In justice to the author, it should be said that this writer admits a possible failure in diagnosis in some cases he reports. However, he presents what, to him, is convincing evidence that paresis in its very earliest states,—in that stage which may be called one of "pre-paresis,"—is a disease that sometimes can be arrested. This arrest may be permanent, and may be attended with so little mental defect that one may call the patient practically cured. Dana contrasts the two diseases—tabes and paresis—and expresses his belief that paresis has the same relation to the brain that tabes dorsalis has to the cord. He considers this relation a proven clinical and pathological fact. Moreover, he believes that just as tabes can be arrested in its earliest stage, we may arrest and even cure, paresis in its earliest stage. Cases of so-called pseudoparesis, of alcohol and syphilis are excluded, and his cases reported—seven in number—are supposedly free from these errors.

Although the subject matter of the paper is not novel and special treatment for these early cases has before been advised and tried, the proposition is presented in a somewhat new way, and the contention of the author so strongly expressed should be a further stimulus to us in the study of cases in early paresis. Unfortunately the diagnosis in the early stages is by no means certain, and the differential diagnosis is, in certain cases, impossible. We must also remember that we cannot rely on mental symptoms, and for the diagnosis of paresis it is absolutely essential that we have some physical stigma. It was noticeable, in the discussion following the reading of the paper, that much adverse criticism was advanced and doubt expressed as to many of the author's conclusions.

EDITORIAL COMMENT.

THE DEMISE OF A NOTED ALIENIST.

Goethe says that "death is the commingling of eternity with time; in the death of a good man, eternity is seen looking through time." If the definition of the poet be correct, then the death of the man represented in the frontispiece of this issue certainly afforded eternity a propitious occasion to scan the portals of time, for William Milan Edwards was the embodiment of goodness and gentleness. Born September 17, 1855, on his father's farm near Peru, Indiana, he attended the district school until he was sixteen years old. He emanated from Eastern and Southern stock, his father having been a New Yorker, and his mother a Kentuckian. His paternal grandfather, Uzil, migrated from New York to Cincinnati in 1804, where his father married Elizabeth Brenton, of Louisville. His paternal great-grandfather, Moses, was a Baptist minister in New York City. After acquiring his preliminary education, young Edwards studied one year in the literary department of Smithson College, at Logansport, Indiana, and during the following two years taught school in his home district, having passed the examination for teacher's certificate while pursuing collegiate study. In 1874 he entered the literary department of the University of Indiana, at Bloomington, where he remained two years, and then taught school again for some time, after which, in May, 1880, he entered the office of Doctors Ward and Brenton, at Peru, Indiana, where he spent one year pursuing medical study. In October, 1881, he entered the department of medicine and surgery of the University of Michigan, where he received the degree of Doctor of Medicine in 1884. On May 1, 1884, he accepted the position of Acting Assistant Physician in the Michigan Asylum for the Insane at Kalamazoo, and in August of that year was promoted to the Assistant Physiciancy, which position he held until June 1, 1891, when he was appointed Medical Superintendent of the Asylum. Thus it will be seen that the doctor's service to the institution covered a period of twenty-five years.

The editor has known Doctor Edwards since his college days, and has watched with pleasure his advancement from Acting Assistant Physician to Medical Superintendent, and to high rank in the profession. He was a man of natural endowments and broad culture, the former a birthright from ancestry noted for patriotism and intelligence, and the latter an acquirement secured through education and travel. He personified the rare exception of a medical man displaying executive ability, business acumen, and mechanical talent. Doctor Edwards was a man of advanced ideas in his specialty. He developed the "Colony" system of caring for the chronic insane under his charge, an innovation which necessitated entirely reorganizing the power, heating, and lighting plants of the asylum. It was at his instance that the detached hospital for the acute insane was built at Kalamazoo, in 1897—one of the first constructed in the United States—an auxiliary for the management of this class of cases now recognized as the most practical extant. He established the Asylum Training School for Nurses, and was greatly interested in the welfare of this important acquisition. He possessed a wonderful memory, and it is related of him that he knew by name every patient in the institution over which he presided, and was likewise familiar with their histories and difficulties. He was considered a good extemporaneous speaker, and as a writer contributed many papers to the literature of alienism. For several years he has conducted the department of "Psychiatry" in this journal, his last contribution to the subject appearing in the January number. He was a nonresident lecturer on Psychiatry in the medical department of the University of Michigan, and was instrumental in affiliating the asylums of the state with the Psychopathic Department of this institution. He enjoyed membership in many medical and fraternal organizations, and his life was marked by liberality and charity.

Doctor Edwards was exceedingly popular with medical men throughout the state, as well as with his fellow-townsmen, and the unfortunate insane committed to his care. He was married eight years ago to Miss Emma Ardelle Merritt, of Union City, Michigan, who survives him. One son, William M., junior, was born of this union.

Doctor Edwards passed to that mysterious realm, from whence no traveler returns, on the morning of April 26, 1905, and notwithstanding the great loss sustained, a molecule of consolation may be found in the fact that "death comes equally to us all, and makes us all equal when it comes."

ANNOTATIONS.

OSLER'S FAREWELL ORACLE.

DOCTOR WILLIAM OSLER addressed the Medical and Chirurgical Faculty of Baltimore on April 7. It was his farewell talk to the Baltimore guild, and he took advantage of the occasion to express a few opinions of professional import, the consolidation of medical colleges, the extension of interstate reciprocity, and the fusion of the various schools of medicine being chief among them. He maintained that a difference regarding drugs should not perpetuate a division of men engaged in the praiseworthy vocation of alleviating human suffering, and believed the time has arrived when homeopaths should renounce the schism and re-enter the fold, especially since the present day prescribing of its followers has rendered the Hahnemannian shibboleth practically meaningless.

A HOSPITAL FOR CONSUMPTIVES.

MICHIGAN is certainly to be congratulated on the passage of the Moriarty-Wallace-Whelan bill providing for the establishment and maintenance of a state sanitarium for consumptives. The measure contemplates an appropriation of $30,000 for this humane purpose. The erection of the buildings and the current expenses thereof for the first year are calculated to require about $20,000. The remaining $10,000 will constitute a reserve fund for expenses incurred during the second year, and provision for the conduct of the hospital thereafter will be made by future legislatures. The Governor is empowered to appoint six commissioners—four of whom shall be physicians—to act as a board of trustees, and the State Land Commissioner is authorized to deed to said board any state lands which may be selected for the site.

POTIONS OF SALINE SOLUTION IN PNEUMONIA.

DOCTOR JOHN R. TODD, of Syracuse, recently made a plea in the *New York Medical Journal* for alkaline beverages in the treatment of pneumonia. Saline enemata and saline hypodermoclysis have already been suggested, but Todd's remedy, which is sodium chloride, is administered by the mouth and has reputed efficiency when incorporated in the following preparation: Sodium chloride, 320 grains; potassium bicarbonate, 160 grains; aromatic fluid extract (United States Pharmacopeia), 30 minims; water, enough to make 4 ounces. A teaspoonful should be given in six to eight ounces of water every two hours, with a teaspoonful of lemon juice. It has been shown by Loeb that the sodium ions of the blood as well as of the sea water are essential for the maintenance of life phenomena, and Sajous concludes that a close relationship exists between a deficiency of sodium and death, the gradual elimination of toxic waste products being not only facilitated but insured by alkaline solution. Behring has shown that the germicidal character of the blood bears a direct relation to its alkalinity, and when the latter is deficient, as in toxemia, the vital forces are impaired. In health the loss of sodium chloride by excretion is compensated by food, but in pneumonia diet and assimilation are insufficient to preserve the equipoise, and hence the reason for employing alkaline potions.

CONTEMPORARY.

THE UTILITY OF THE HISTORY OF MEDICINE.

[BOSTON MEDICAL AND SURGICAL JOURNAL.]

THE history of medicine in the past, and for a long period, enjoyed every favor to which it is so justly entitled. In point of fact all the greatest physicians of past times occupied themselves considerably with the history of their profession and published the results of their researches, giving to the medical world extremely interesting works, which unfortunately are little read by physicians and students of the present time. The Faculty of Medicine of Montpellier had a chair of the history of medicine, which unfortunately has been abolished. The Faculty of Medicine of Paris founded its professorship of medical history at the time that the schools were founded in the year III. This chair was preserved under the new organization in the year XI and was for a long time held by men of great reputation. At the present time this chair is filled by the eminent professor Dejerine, who succeeded Laboulbène and Brissaud. Various incidents show that in Germany more and more interest has been taken in the history of medicine during the last decade, and the German government has adopted the project of a law proposing a reorganization of the examinations which future physicians will be obliged to undergo. This project states that hereafter the preliminary examination (Staatsexamen) will attach more importance to specialties, such as legal medicine and the history of medicine. In adopting this rule the German government has been obliged to create a professorship for the history of medicine and medical geography in all the universities throughout the Empire.

In reality the study of these two branches offers numerous advantages to physicians, and the least of these should be sufficient to restore a study which has been so unjustly neglected of recent years. In the inaugural discourse to the course of medical history at the Military Medical Academy of Saint Petersburg, Professor Skoritschenko-Ambodik has remarked: "The historical method is a supplement absolutely necessary to that of observation and experimentation. By following a certain phenomenon from century to century, by witnessing its various changes under the domination of various conditions, we form a comparative manner of observing, supplementary to the knowledge founded on the study by experiments and observation. Besides this, it is history which keeps us in touch with the consecutive development of medicine, explains to us the modern position, renders us reasoning participants in the advancement of science, enlarges the sphere of our ideas, develops a critical analysis relative to modern doctrines and contributes to retain the dogmas of medicine. By exposing predominating theories it allows one to examine the matter on every side. All the celebrated representatives of medicine pass before our eyes, and history, studying their ways of thinking and of observation, gives us the key to the understanding of the causes of the success and nonsuccess of medicine. History in no way conceals the sad scenes of persecution of the truth, and it teaches us an instructive lesson for the future. And lastly, history of medicine permits a more exact understanding of certain occurrences of civil history."

Reference should also be made to a criticism which appeared in the *New York Medical Journal* some little time ago relating to the well-known work of Doctor Roswell Park, entitled "An Epitome of the History of Medicine." In speaking of this work that journal points out that the study of medical history is too greatly neglected by physicians and, with the author, it regrets this condition of affairs and goes on to say that with their fever for progress, professional men of America have less time than physicians of the old world to go over the road once trodden. One should not be astonished that in America the history of medicine has been so neglected, for the simple reason that it does not give rise to the discovery of new remedies.

It cannot be denied that there is something practical in the history of medicine, and it is not merely by chance that the great masters of the art, such as Hippocrates and Galen down to Virchow, Charcot and Osler, urge the study of medical history. Its advantages have without doubt struck the critical minds of several eminent physicians, because in all countries a favorable movement for the study of this branch, so useful to the progress of medicine, is to be noted at the present time. The well-known publication *Janus* took the initiative in founding an international association for the study of medical history and geography. On the other hand *La France Médicale,* thanks to the work of Professor Blanchard and Doctor Albert Prieur, has been successful in forming an organization entitled "Société Française d'Histoire de la Médecine," and numerous distinguished physicians were eager in their response to the call for cooperation. In a circular sent to various physicians announcing its foundation, the first paragraph reads as follows: "Considering that the study of medical history is indispensable for the wise understanding and progress of medicine and those sciences which it includes, we have thought we might contribute to their development by creating, with the aid of all those who share our opinion, a society of medical history."

With such an initiative, it is to be hoped that a general current will oppose certain existing tendencies. Certainly, a little poetry, a little philosophy, and a little idealism can in no way harm the medical science, and may even embellish and inspire it.

MEDICAL NEWS.

HOSPITAL INTERNE (MALE): EXAMINATION FOR PANAMA CANAL, JULY 12-13, 1905.

THE United States Civil Service Commission announces an examination on July 12-13, 1905, at the places mentioned below to secure eligibles from which to make certification to fill vacancies in the position of hospital interne under the Isthmian Canal Commission on the Isthmus of Panama. Two days will be required for this examination. As an insufficient number of eligibles resulted from the examination held on January 18, for this position, qualified persons are urged to enter this examination, to which men only will be admitted. Each applicant for the Isthmian Canal Service will be required to submit to the examiner, on the day he is examined, a photograph of himself, taken within three years, which will be filed with his examination papers as a means of identification in case he receives appointment. An unmounted photograph is preferred. The date, place, and kind of examination, the examination number, the competitor's name, and the year in which the photograph was taken should be indicated on the photograph. Age limit, twenty to thirty years on the date of the examination. Salary, $50 per month, with board and quarters, provided that if appointees are retained in the position of interne after one year they will be paid $125 per month. Only graduates of reputable medical schools having a three years' course will be admitted to this examination. The examination will consist of the subjects mentioned below, with the relative weights indicated.

Subjects.	*Weights.*
(1) Letter-writing (the subject-matter on a topic relative to the practice of medicine)	5
(2) Anatomy and physiology (general questions on anatomy and physiology, and histologic or minute anatomy	15
(3) Chemistry, materia medica, and therapeutics (elementary questions in inorganic and organic chemistry; the physiological action and therapeutic uses and doses of drugs)	10
(4) Surgery and surgical pathology (general surgery, surgical diagnosis; the pathology of surgical diseases	20
(5) General pathology and practice (the symptomatology, etiology, diagnosis, pathology, and treatment of disease	25

(6) Bacteriology and hygiene (bacteriologic methods, especially those relating to diagnosis; the application of hygienic methods and prophylaxis and treatment)	10
(7) Obstetrics and gynecology (the general practice of obstetrics; diseases of women, their pathology, diagnosis, symptoms, and treatment, medical and surgical)	15
Total	100

This examination is open to all citizens of the United States and also to aliens who comply with the requirements, provided that aliens appointed for service on the Isthmus of Panama shall not be eligible for appointment or transfer to any other branch of the public service.

The county officer's certificate in the application form need not be executed. No person will be appointed for service on the Isthmus who is not physically sound and in good health. Persons appointed to positions under the Isthmian Canal Commission will be expected to proceed promptly to the Isthmus. Persons examined for positions under that Commission will not be eligible, as the result of such examination, to positions in the United States or Philippine services.

Applicants should at once apply either to the United States Civil Service Commission, Washington, District of Columbia, or to the secretary of the board of examiners at any place mentioned in the accompanying list, for application Form 1312. The medical certificate in Form 1312 must be filled in by a reputable practicing physician. No application will be accepted unless properly executed and filed with the Commission at Washington. In applying for this examination the exact title as given at the head of this announcement should be used in the application.

As examination papers are shipped direct from the Commission to the places of examination, it is necessary that applications be received in ample time to arrange for the examination desired at the place indicated by the applicant. The Commission will, therefore, arrange to examine any applicant whose application is received in time to permit the shipment of the necessary papers.

Illinois.—Chicago, Peoria, Springfield.

Indiana.—Evansville, Fort Wayne, Indianapolis, Lafayette.

Michigan.—Detroit, Grand Rapids, Manistee, Marquette, Saginaw, Sault Sainte Marie.

Minnesota.—Duluth, Mankato, Saint Paul.

Ohio.—Cincinnati, Cleveland, Columbus, Ironton, Toledo, Zanesville.

Wisconsin.—Appleton, Ashland, Chippewa Falls, La Crosse, Madison, Marinette, Milwaukee.

MINOR INTELLIGENCE.

DOCTOR REUBEN PETERSON was elected vicepresident of the American Gynecological Society at the annual meeting of the organization held recently in Niagara Falls.

SEVEN deaths from cerebrospinal meningitis have occurred in Chicago since January 1, the last victim being an Italian immigrant, twenty years of age, who was ill upon his arrival from Europe.

DOCTOR SAMUEL G. DIXON, of Philadelphia, has been appointed by Governor Pennypacker, State Commissioner of Health, an office lately created by the legislature, at a salary of $10,000 per year.

PINKEYE is epidemic in the City of Philadelphia and suburbs, and is gradually spreading toward the center of the city. The disease is especially confined to school children, and it is attributed by physicians to uncleanliness and carelessness.

THE osteopaths of Pennsylvania have succeeded in effecting the passage of a bill which creates an osteopathic examining board of five members. This victory exempts the cult from the examination requirements imposed upon regulars and homeopaths.

DOCTOR JOHN B. MURPHY has severed his connection with Northwestern University and has accepted the Professorship of Surgery at Rush Medical College. The position at Rush was tendered him at the meeting of the trustees of the University of Chicago, on May 26.

A DELAWARE lady, eighteen years of age, is reported to have borne seven children within a period of two years. Her first confinement resulted in the birth of twins, and one year ago she was again delivered of twins, but the climax was reached lately when she gave birth to triplets, which unfortunately did not survive.

RABIES is epidemic in Pennsylvania, the disease being especially prevalent in the region west of the Schuylkill river. Since May 1, more than fifty dogs have manifested symptoms of hydrophobia, and a number of the animals have been treated with Pasteur's antitoxin at the University of Pennsylvania Veterinary Hospital.

A BILL appropriating $300,000 for the establishment of two tuberculosis hospitals on the state forestry reservations of Pennsylvania, has been vetoed by Governor Pennypacker. The action of the governor is commended by a certain faction of the profession on the ground that existing institutions should be developed, before new ones are established.

THE twenty-fourth annual meeting of the Ontario Medical Association was held in Toronto on June 6, 7 and 8, 1905, and proved to be one of the largest and most instructive gatherings in the history of the organization. The following officers were elected: President, Doctor George A. Bingham; secretary, Doctor Charles P. Lusk; treasurer, Doctor Fred. Fenton.

THE late Delia A. Hanmer, of Detroit, bequeathed $10,000 to Harper Hospital for the endowment of the Hanmer School of Music Room; which, as stated in the will, is created for those whose condition is not chronic but for whom there is a reasonable chance for recovery. Preference will be given to persons who have in some connection been identified with the musical fraternity.

DOCTOR L. F. BARKER, appointee to the Professorship of Medicine at Johns Hopkins University, was tendered a farewell dinner at Auditorium Hotel on May 27 by the faculty of the University of Chicago, with which institution he has recently been connected as head of the department of anatomy. Toasts were responded to by Professor Paul Shorey, Professor Albion W. Small, Doctor Frank Billings and Doctor Hugh T. Patrick.

THE thirty-fourth annual meeting of the American Medical Society for the Study of Inebriety and Alcohol will be held in Portland, Oregon, June 12 and 13, 1905. Professor W. S. Hall, of Northwestern University, will deliver the president's address at the first day's session, and will review the progress made in the study of alcohol during the year The second day will be devoted to a memorial service in honor of the late Doctor Nathan S. Davis.

FOUR cases of bubonic plague are reported from Leith, Scotland, the disease being confined to the family of a laborer. It is believed that rats were the source of infection, and physicians attribute the increase of trade between Leith and the far East as responsible for the occurrence of the malady. Stringent precautions are being taken against the spread of the disease, and it is thought that no more cases will develop.

JOHN BARRETT, former United States Minister to Panama, and newly appointed minister to Columbia, who recentlly arrived in this country, reports that the sanitary conditions at the Isthmus are vastly improved under the efficient management of Doctor Gorgas, but that yellow fever is quite prevalent at Colon, five new cases having been reported on the day of his departure. Of the seven thousand employes at the Canal Zone but five per cent were ill when Mr. Barrett left, showing that the conditions are not at all alarming.

DOCTOR GUSTAVUS P. HEAD has been awarded the Marshall Hall prize by the Royal Medical and Chirurgical Society of England. The prize is given every five years for original work on the nervous system. Doctor Head reported that he had the sensory nerves in his own arm divided and then reunited by stitches, careful record being made each day of his findings. He discovered that the skin is supplied by two kinds of sensory nerves, which carry different impressions; one set governing sensations of pain, heat, and cold; and the other sensations of touch. Upon the former set depends the healing power of the skin.

PHILANTHROPIC persons have aided the Methodist Episcopal Hospital, of Philadelphia, in adding four new buildings to its present equipment, the structures being a Nurses' Home, erected at a cost of $40,000, by Mr. T. Comly Hunter in memory of his mother; the Mary Burton Dispensary; a power house; and an ambulance stable, the four buildings costing in the neighborhood of $121,000.

THE new Children's Hospital, which was erected on the grounds of the County Hospital, Chicago, at a cost of $80,000, was formally opened on May 23. The structure is of three stories, is 147 feet long by 43 feet deep, and comprises twenty wards, which are capable of affording accommodation to one hundred fifty persons. The building is strictly fire-proof and is modern in every detail. A corps of fifty-seven physicians and twelve nurses will minister to the needs of the sick.

THE Japanese authorities are exerting every effort to prevent the appearance of disease among the troops during the summer months. At the time of the departure of the Russians from Mukden the city and surrounding country was in a very unhygienic condition, and thousands of Japanese soldiers and Chinese laborers are engaged in giving the place a thorough cleaning. Stringent precautions have been taken to maintain a pure condition of the drinking water, and other measures of prevention have been adopted.

THE New York Board of Health has recently been conducting a number of experiments to ascertain approximately the number of bacteria that exist on circulating currency. Paper money was the most unclean, the number of organisms found being 170,000. The average nickel contained about 40,000, while copper coin was comparatively clean. Good growths were obtained from coins which had been placed in the mouths of children afflicted with diphtheria, at the end of twenty-four hours, but after the elapse of forty-eight hours no growth was apparent. Cultures could be procured from paper money, however, after as long a period as thirty days. The results obtained show the great danger to which the public is subjected when handling soiled bills.

A TESTIMONIAL dinner was tendered to Doctor Thomas Addis Emmet on May 29, the occasion of his seventy-seventh birthday. More than one hundred physicians gathered to do honor to the distinguished gynecologist, who was lauded as the first man that carried the fame of American surgery into European professional circles. Several physicians made speeches on the various phases of Doctor Emmet's character, and Doctor Frances J. Quinlan commented on the intense patriotism of the family, citing the case of the Irish patriot, Robert Emmet, and mentioning Doctor Emmet's own work, "England's Misrule of Ireland," saying that the book had aided more to place Ireland's cause fairly before the world than any other work that has ever been issued.

INSANITY is increasing at an alarming rate in New York State, the average yearly accession for the past nine years being seven hundred thirty-eight. The condition has gained headway to such a marked degree that at present there are about three thousand more patients than the fourteen state hospitals can accommodate, which means an overcrowding for the entire hospital system of nearly fourteen per cent.

THE trustees of Jefferson Medical College have received a donation of five thousand dollars from Professor W. W. Keen, with which to found a memorial for his wife, to be known as the "Corinna Borden Keen Research Fellowship." The conditions are that when the interest has accumulated to five hundred dollars the sum shall be awarded by the faculty to an alumnus of Jefferson Medical College, who has been graduated for not more than ten years. The individual to whom the fellowship is given shall spend one year in study, at a suitable clinic, on a subject which he, under sanction of the faculty, shall choose. He must also publish a paper embodying the results of his investigations.

RECENT LITERATURE.

REVIEWS.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE FOR STUDENTS AND PRACTITIONERS.*

THE present work is a volume of 1119 pages devoted, as the title indicates, to the practice of medicine. The subject matter is arranged in the usual order, with a section on tropical diseases by Doctor Kieffer of the Army Medical Service.

While a great deal of the teaching is rational and to be commended, the book contains, nevertheless, so many errors, both of omission and commission, as to seriously interfere with its utility. In connection with typhoid fever, the author countenances the use of low dilutions in making the Widal reaction, though he seems to favor the higher dilutions, that is, 1:60; but many would doubt the advisability of waiting two hours for agglutination to take place. In the treatment of this disease, the use of dilute hydrochloric acid and pepsin as a routine measure is not of very obvious benefit, though probably harmless. The writer gives his own methods for the application of hydrotherapy, but also describes that of Brand. In recommending acetanilid in two-grain doses every three or four hours for the treatment of the headache which is so often present, the value of the ice-bag is apparently lost sight of. The care of the patient during convalescence is dismissed with too few words.

In discussing croupous pneumonia, the statement is made that the "incubation period is forty-eight hours;" this, though possibly correct, would seem to be too dogmatic in the light of our present knowledge. The physical signs of this malady are taken up according to stages; during hepatization the author speaks of bronchial breathing, "which is caused by the air in the bronchial tubes, which produces a sound which is transmitted through the consolidated lung unmuffled by the vesicular murmur usually present"—a view as to the origin of bronchial breathing slightly at variance with that of the majority of the best writers. Blood cultures are not mentioned, while the remark, "It is characteristic of croupous pneumonia that the chlorides in the urine are greatly decreased," may be misunderstood. The treatment, on the whole, is good.

Cancer of the stomach is considered at length, though, in the opinion of the reviewer, unsatisfactorily. One is warned of the danger of perforation in using the stomach tube for lavage, though in the discussion of the diagnosis of this disease the Seidlitz powder is recommended for purposes of inflation; the comparative risk attaching to the two procedures is obvious. Under diagnosis we find such statements as the following: "Additional signs on palpation consist in a hardening of the gastric walls due to a contraction of their muscular fibres," and again, "Auscultation may reveal constant, direct, or reversed peristalsis if the growth obstructs the pylorus. * * *" If chemical tests are to be given here, it is not to be supposed that the worker would be satisfied with that for free hydrochloric acid alone. Then, too, in the differentiation of the stomach findings of gastric cancer and pernicious anemia, it would be more pointed to emphasize the importance of looking for traces of blood, the Oppler-Boas bacilli, and organic acids, than to content one's self with the statement that while "in some cases of pernicious anemia there is a marked diminution in the quantity of hydrochloric acid, it is rarely if ever so persistently absent as it is in gastric carcinoma," a finding with which some workers would be forced to disagree.

The consideration of pernicious anemia also leaves much to be desired. If the history of this disease is to be given at all, it is a pity to omit the names of Addison and Biermer, both of whom rendered such distinguished service in establishing the condition as a distinct disease. "These nucleated (red) cells, both large and small, contain a great amount of hemoglobin, and some of them differ from the ordinary red cells in one very important particular, namely, they possess ameboid movements, and, further, when the blood is examined, they are seen to form rouleaux as do ordinary red cells." Part of this quotation, at least, needs pruning, while the frequency with which polychromatophilia occurs is sufficient warrant for mentioning it, even though it were not deemed worthy of greater consideration. The pathogenesis, or rather the theories regarding it, are hurriedly passed over; symptomatology, morbid anatomy and treatment are incomplete.

On page 333 the physical signs of pulmonary tuberculosis are inadequately set forth. Inspection is practically ignored, while failure to mention retraction of the apex on percussion is a serious omission.

Whether the author's explanation of the cardiac hypertrophy in chronic interstitial nephritis is the correct one is debatable, for it is a well-known fact that in an acute nephritis in rare instances hypertrophy of the left ventricle is observed without alteration in the arteries, though with high arterial pressure; and in the chronic interstitial variety it is impossible to state whether hypertrophy or sclerosis of the arteries occurs first; indeed, some maintain that both are the sequel of high pressure. Sphygmanometry, a valuable diagnostic aid and therapeutic guide, has been overlooked.

The consideration of "Tick Fever" might well be delayed until the condition is proved to be a distinct clinical entity.

Trypanosomiasis is given under "Diseases Due to Animal Parasites." It might, perhaps, be preferable to transfer it, together with other diseases under the same heading, to the section dealing with "Diseases Due to a Specific Infection," or else to include malaria, for example, in the former category.

While the book contains much that it useful, as has been said, it appears to the reviewer that its defects are altogether too numerous; the teaching is at times not only unsound but even unsafe.

The illustrations are, on the whole, good and timely. The publishers have maintained their usual standard of excellence.

*By Hobart Amory Hare, M. D., B. Sc., Professor of Therapeutics in the Jefferson Medical College, Philadelphia; Physician to the Jefferson Medical College Hospital; One-time Clinical Professor of Diseases of Children in the University of Pennsylvania, et cetera. Illustrated with 129 engravings and 10 plates in colors and monochrome. Lea Brothers & Company, Philadelphia and New York, 1905.

APPENDICITIS: ITS DIAGNOSIS AND TREATMENT.*

THE demand for a third edition of this work attests its worth and appreciation. The author has from the first taken an ultrastand in certain respects in the treatment of this disease and while he cannot be said to have won the adherence of all his readers to his views in their entirety he has certainly gained their admiration. This edition has been improved by the excellent essays on "The Blood Count in Appendicitis" and "The Function of the Cecum and Appendix," "Chronic Appendicitis," "Appendicitis in Children" and "Typhoid Appendicitis." The History of Appendicitis is an admirable section of the work. The entire volume is a credit to both author and publishers.

*By John B. Deaver, M. D., Surgeon-in-Chief to the German Hospital, Philadelphia. Third edition, revised and enlarged. Containing sixty-four full page plates, eight of which are colored. P. Blakiston's Son & Company, Philadelphia, 1905. Price $7.00 net.

The Physician and Surgeon

A PROFESSIONAL MEDICAL JOURNAL.

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ORIGINAL ARTICLES.

MEMOIRS.

RECENT EXPERIENCES IN KIDNEY SURGERY AND THE UTILITY OF DIAGNOSTIC AIDS.*

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THAT the surgery of the kidney has kept pace with the rapid advance made in other branches of surgery is particularly recognized in the marked decrease of the rate of operative mortality in the last decade, as compared with that of the previous one.

One of the most valuable papers published during the period of 1900-1903 on renal surgery is that of Schmieden,[1] who collected records of 2,100 renal operations, including 1,118 nephrectomies, of which 108 were performed for lithiasis and 201 for tuberculosis. This author states that the former mortality of this operation was 33.3 per cent and that it has now been reduced one-half—to 16.7 per cent.

Another German writer, Kümmell,[2] calls attention to the improved results after operation and their relation to improved diagnostic methods, and declares that, since the use of cryoscopy, radiography, and cystoscopy, the general mortality after nephrectomy has dropped to 4.8 per cent.

I have prepared reports of some personal cases of renal surgery, representing different conditions which call for operative interference; and report them, not because they carry particular weight in a statistical way—as their number is too few—but on account of the fact that each one emphasizes some special point of interest bearing upon the question of diagnosis or of operation.

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*Read by invitation before the SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

[1] *Deutsche Zeitschr. f. Chirurgie,* Volume LXII, 1902.

[2] *Arch. f. Klin. Chirurgie,* Volume LXXII, 1903.

Nor do they illustrate completeness of detail in the preliminary history or a systematic resort to all the valuable diagnostic aids which are at present at command. They are, therefore, in some instances incomplete; and attention is called to such defective features with the object of promoting systematic study and painstaking care in preliminary investigation as an aid to accurate diagnosis.

These cases include one nephrectomy for multiple renal calculi; one nephrotomy for multiple calculi; two nephrotomies for pyelonephritis, followed by secondary nephrectomy; one nephrectomy for tuberculosis; two nephrectomies for rupture of the kidney.

The maladies, therefore, include renal lithiasis with pyelonephritis; pus kidney without stone; tuberculosis of the kidney, and trauma.

Doubtless, we must look to greater experience and improvement in operative technique for an explanation of the notable advancement in this branch of surgery; but, above all, is it referable to refinement of diagnosis. To this end we rely upon the urinary and *x*-ray laboratories and the perfection of instruments and their better manipulation in connection with cystoscopy and catheterism of the ureter.

In the days before the introduction of the *x*-ray and cystoscope, before the laboratory was considered such an important feature, surgeons depended upon the physical examination, a rather cursory examination of the urine, and the subjective symptoms of the patient. It is needless to say how misleading might be the results of any or all of these methods of diagnosis. One may find, upon looking over the earlier text-books, that some writers endeavored to determine the location of a lesion by examining the urine for such evidences as the presence or absence of acidity, the presence or absence of mucus, and with respect to its general appearance. While we may still gain a certain amount of presumptive knowledge from such gross signs as these, we more frequently find the fallacy of relying too greatly upon such evidence.

In the physical examination we are also prone to be misled. How often is it impossible to palpate a kidney, in spite of the existence of a well-defined surgical lesion such as pyelitis, pyelonephritis, or renal lithiasis, and how mystifying often are subjective symptoms when pain is not referred to the kidney in which the suspected lesion is located, or when there is an absence of pain prior to an operation which reveals a well-marked surgical lesion; or, finally, when the symptoms are all vesical in character while the lesion is renal!

With the present methods of diagnosis, we have attained that degree of precision to which surgical advance in other departments is persistently tending; so that, today, we aim not only to determine the presence or absence of a lesion in the kidney; but, before operating on one kidney, we are enabled to find out the condition and functional activity of the one on the opposite side. The deep chagrin which must necessarily result from removing an only kidney need never occur with the present means of diagnosis.

In investigating a given case of suspected kidney lesion, we begin by eliciting a careful history of the case, the important features of which are the existence of pain, its character and duration, its location and intensity and whether it is paroxysmal or persistent. Palpation further determines the location of the painful area and the presence of tumor or other abnormal condition of the region examined. Laboratory examination of the urine will reveal the presence of such abnormal constituents as pus, blood, bacteria and crystalline deposits, determine the daily output of solid constituents, which denotes the functional activity of the kidneys, and, by the aid of the microscope, recognize such other abnormal factors as are suggestive of kidney disease. When, by means of segregation or ureteral catheterism, the urine of each kidney is obtained separately, a comparative analysis may localize the lesion in one kidney and denote the functional activity of the other. Cystoscopic examination of the bladder further aids the diagnostic investigation, either by inspection of the ureteric orifices or by ureteral catheterism. Cystoscopy and careful observation of the ureteric orifices will often afford sufficient information to decide the question of operation when it is clearly observed that the urinary jet from one side is plainly bloody or purulent while that of the other is devoid of such appearance and when the other resources of diagnosis give sufficient support to the cystoscopic picture.

Indiscriminate practice of ureteral catheterism is not to be favored; although the important question of the functionating power of the second kidney when investigated by the application of cryoscopy is useful only when employed in connection with the separate urines from the two kidneys. Casper and Richter[a] seem to have systematized a plan which they have carried out in a large number of cases for the purpose of obtaining definite knowledge previous to operation. This plan consists in obtaining the urine separately from each kidney after the administration of phloridzin when, by determining the cryoscopic point and relative activity of sugar elimination, the functionating power of each kidney is revealed.

These authors record a large number of cases to support their claim for the value of this method.

Of eighty-eight operations—seventy-six nephrectomies and twelve nephrotomies—performed after diagnosis by Casper and Richter's method, there was not a single death from anuria or renal insufficiency. Nine cases are cited, in which, while the operation ended fatally, the diagnosis as to the good and sufficient state of the second kidney was borne out by autopsy; and furthermore, in three other cases, the diagnosis of an incompetent second kidney was also borne out by autopsy.

The inestimable advantage of x-ray diagnosis in lithiasis has been demonstrated by the discovery of many renal and ureteral stones that otherwise would not have been known to exist and has taught the unreliability of the absence, and often the presence, of pain in the kidney region. Improvement in the apparatuses, as well as in the use of them, has done much to render negative diagnosis more reliable; and in this particular we may hope for still greater advancement in the future.

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[a] *Mittheil. aus den Grenzgebieten F. Med. u. d. Chir.*, Volume XI, 1903.

The first two cases that I will report are nephrotomies for abscess of the kidney, followed by secondary nephrectomy.

Case I.—J. R., aged twenty-seven. Principal complaint, January 6, 1902, was severe pain in the right side. Urine exceedingly purulent. Temperature 104° Fahrenheit. Marked tenderness in the right kidney region. No tumor. History of a severe strain while carrying a heavy trunk four months previously, followed by hematuria, dysuria and frequent urination. Pain in side has persisted more or less ever since that time. No venereal history. Examination for tubercle negative.

Exploratory lumbar nephrotomy was performed. Several kidney abscesses involving the pelvis and the renal parenchyma were evacuated. There was temporary improvement following nephrotomy, but subsequent condition of both wound and patient was unsatisfactory. There was a continuous discharge of large quantities of pus, and the general condition was bad, as though from septic cause. Secondary nephrectomy was therefore performed two months after the nephrotomy. The patient made a slow recovery, but after leaving the hospital and taking an ocean trip, returned in robust health.

The specimen of this case is interesting in that it shows complete obliteration of the pelvis and occlusion of the ureter, which occurred after the primary operation (Figure I).

Case II.—The next case is similar in some respects to the previous one. It was referred as one of possible renal calculus, although there were symptoms of colic. The urine contained a large quantity of pus of most foul and fetid character. A large and symmetrical tumor could be palpated in the left kidney region, near the surface. This was opened by complete incision, and a large quantity of pus of the same foul character as that contained in the urine was evacuated. There was no attempt to remove the kidney at this time.

Two months later a secondary nephrectomy was performed, on account of the unsatisfactory condition of the patient. The remainder of the damaged kidney was removed with difficulty on account of extensive adhesions. The wound healed slowly, but six months after the operation the patient presented himself in robust health.

Although in neither of the foregoing cases a complete preliminary investigation was made, further investigation would not have altered the course adopted; and resort to further diagnostic aids, such as the *x*-ray or cystoscope, would have delayed operation which was obviously a matter of immediate necessity. Nor was the question of the functional ability of the opposite kidney of prime importance, as the principal danger in both instances was progressively failing health on account of sepsis; and the chance of an insufficient second kidney was a lesser risk than that of general sepsis.

The next two cases are both examples of renal lithiasis, one operated upon by nephrotomy and the other by nephrectomy.

Case III.—W. L. B. This patient's principal complaint, October 20, 1904, was difficult urination, which was frequent and painful. He urinated every hour by day, and two or three times during the night. The urethral and vesical trouble dated back fifteen years, to a specific urethritis. Examination discovered a stricture at the bulbomembranous junction, barely admitting a filiform bougie. The urine was freely purulent, and formed a heavy, bulky deposit, of foul odor. There was a trace of albumin, some hyaline casts, and a normal urea output. These features practically cover the entire history of his case. There was no history of any pain, either dull, sharp or paroxysmal, in the region of the kidney. The patient was very fleshy; palpation was

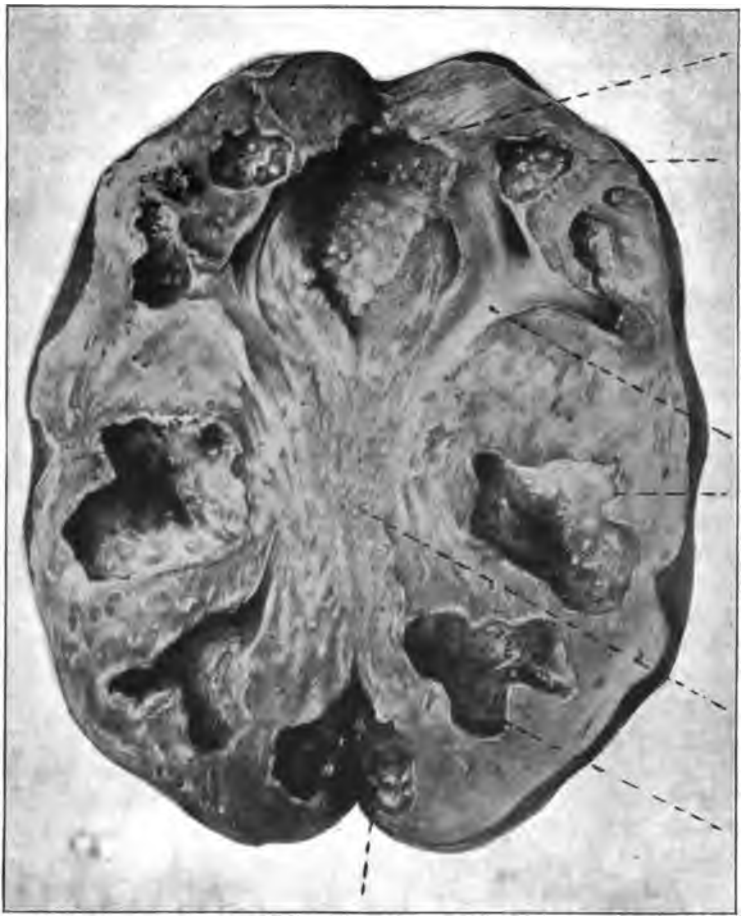


FIGURE I.—PYELONEPHRITIS WITH COMPLETE OBLITERATION OF THE PELVIS AND OCCLUSION OF THE URETER.

difficult and revealed nothing. In fact, there was no reason to suspect anything connected with the kidney, as all the symptoms were urethral and vesical, and the history a very straight one, namely, acute specific urethritis, relapsing in type and protracted in duration; chronic urethrocystitis; gradual stenosis of the urethra at the bulbomembranous junction down to the size of a filiform bougie.

Perineal section was performed October 25, 1904. Stricture of the bulbomembranous urethra was incised to thirty-one French. The bladder was explored with the finger and the vesical neck was found to be distensible. In spite of the establishment of perineal drainage, there was no reduction of pus in the urine. Cystoscopy, which was impossible before, on account of the contracted urethra, is now performed through the perineal opening. The bladder vessels appeared to be turgescent and the ureteric orifices swollen. The urinary stream from the right side was distinctly cloudy, so much so that the field of vision was quickly obscured, and the bladder had to be rewashed frequently.

On account of the large quantity of pus in the urine, and because the stream from the right kidney was plainly purulent, in the absence of symptoms of renal calculi, the history strongly suggested ascending infection of the kidney from a urethrocystitis.

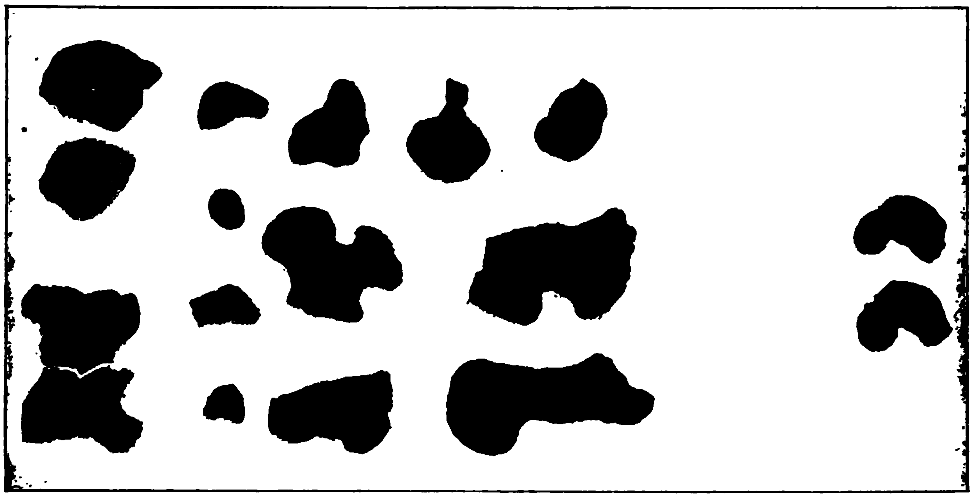
On November 29, 1904, the right kidney was explored through a lumbar incision and found to be much enlarged and very adherent to the surrounding tissues. Palpation recognized a mass of stones, and the cortex was incised and the stones removed, one by one, until twelve had been extracted. In examining the tissues around the ureters, above the bladder, two additional stones were found, which at first were thought to be in the ureter, but on passing a catheter through the pelvis to the bladder, it was discovered that these two stones were encapsulated in the soft tissues around the outside of the ureter (Figure II). On the anterior surface of the cortex there was an area of scar tissue that might have been the site through which these two migrating calculi were delivered. I know of no other explanation of this unusual occurrence. After removing all other calculi, the wound was closed with drainage. In the absence of definite knowledge of the other kidney nephrectomy was not considered.

The patient made a good recovery, leaving the hospital at the end of four weeks, and though the wound healed slowly, it eventually closed entirely, and he regained a robust condition of general health.

This case is particularly remarkable for the absence of symptoms referable to the kidney. It demonstrates how a patient may have not only one, but fourteen stones, of large size, and yet the situation be completely obscured by absence of pain in the kidney region. There is positively no doubt in the patient's mind about this absence of pain, as he has confidently repeated it on many occasions. The *x*-ray would, of course, have made a satisfactory diagnosis.

Case IV.—Mrs. A. H., aged forty. On March 24, 1903, this patient complained of dragging pain in the right infracostal region, which she associated with a movable body in the right abdomen. Pain varied with the appearance and disappearance of this movable body.

An operation had been performed ten years previously, when it was alleged that a small calculus was extracted from the right kidney. One or two paroxysmal attacks followed, but for seven or eight years pain had been only in connection with what was undoubtedly a nephroptosis of the right kidney. The right kidney was palpable and unusually movable. Urinary examination revealed abundance of pus and bacteria, one-sixth of one per cent albumin; urea output within the normal limit. The microscope showed cells from the renal pelvis. No cystoscopic examination was made at this time, and no *x*-ray pictures taken. The case was thought to be one of chronic pyelitis and nephroptosis.



FROM PELVIS AND CALICES

FROM CELLULAR TISSUE OUTSIDE OF PELVIS AND URETER

FIGURE II.—RENAL CALCULI.

On January 2, 1904, one year later, the patient returned in about the same general physical condition, presenting the same urinary features and the same symptoms. An *x*-ray picture was taken by Doctor Cole which revealed the presence of two stones, one in the pelvis and one in the calices (Figure III).

Operation was performed June 15, 1904. An oblique incision was made from the tip of the twelfth rib. The kidney was readily brought into the field and by palpation several stones were distinguished enclosed in what seemed to be little more than a sac (Figure IV). On account of the size of the stones and the apparent destruction of kidney tissue, nephrectomy was determined upon. Recovery was uneventful.

The patient sat up at the end of one week, was out of bed on the tenth day and left the hospital on the twelfth day.

She reported nine months after operation, greatly improved in general health; no more pain, urine clear and sparkling.

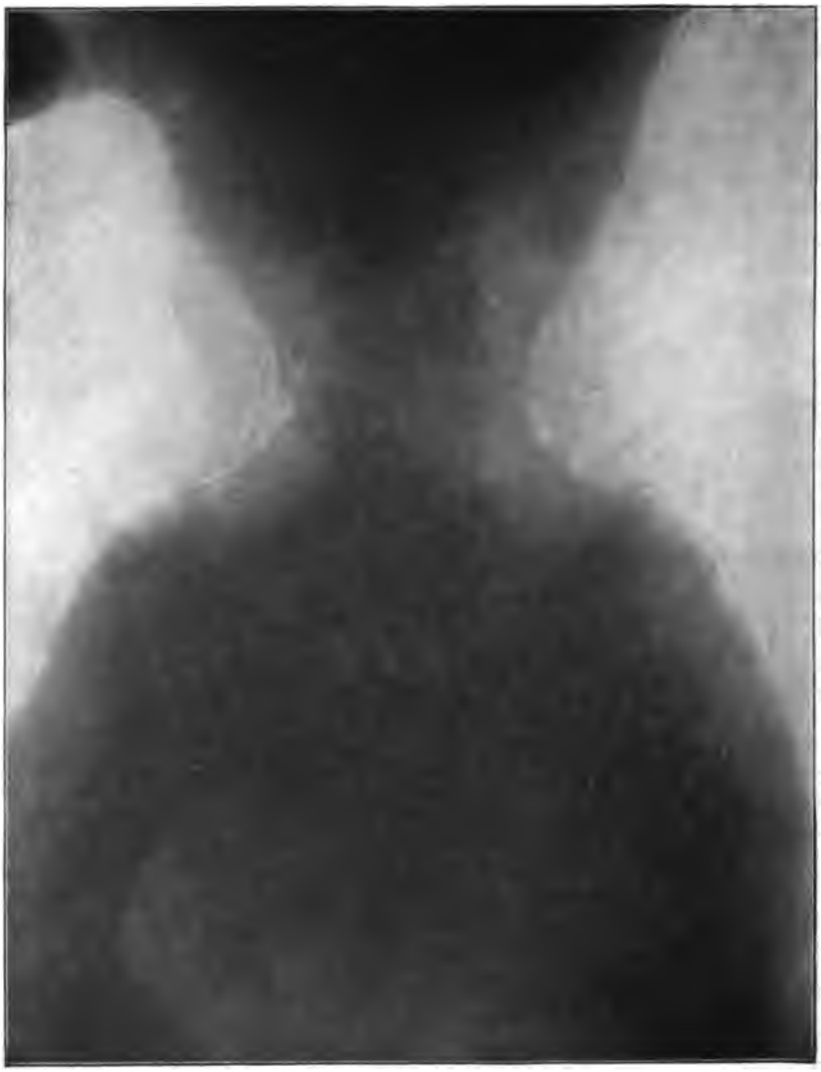


FIGURE III.

This case demonstrates the importance of a complete investigation and the value of the x-ray, which should have been resorted to at an earlier date and would undoubtedly have led to an earlier operation.

The two foregoing cases represent two different operative courses—one conservative and the other radical—in nephrolithiasis accompanied by pyelonephritis. In nephrolithiasis without pyelonephritis, there is little question that nephrotomy is the operation of choice. When, however, the kidney is the seat of suppuration, the question must then arise, What are the indications for extirpation of the organ, primarily or secondarily?

In the first two cases reported in this article—those of suppuration of the kidney *without* lithiasis—it was necessary to do secondary nephrectomy on account of continued destruction of the kidney substance by continuation of suppuration.

It is not always easy to determine the proper indications for a choice of operation. It is necessary to take into account the general condition of the kidney, the various complications, the integrity of the other kidney, and other considerations. Often after deciding on one method, operation shows that we should have chosen the other. Results may be apparent only after a considerable interval.

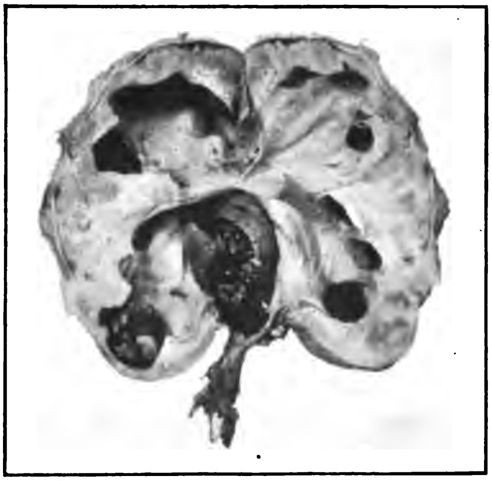


FIGURE IV.—PYONEPHRITIC STONE KIDNEY.

Israel[4] states that the aim of operation is to preserve the kidney when possible. He operated sixty-one times with nine deaths. Nephrectomy was performed in cases of badly infected kidney where conservatism was not practical. In fifteen such cases of nephrectomy for badly infected kidney he had only two deaths; and in thirteen conservative operations where the kidney had become badly infected he had five deaths. In twenty-nine simple nephrotomies—so-called "ideal" cases—he had one death. It thus appears that the infection plays an important rôle.

Kümmell[5] makes a rule to save the kidney if the ureter is permeable and there appears to be enough renal tissue left. We find, nevertheless, in his record of cases twenty-three infected cases of renal

[4] *Chirurg. Klinik f. Nierenkrankheiten*, 1901.

[5] *Archiv. f. Klin. Chirurgie*, Volume LXXII, 1903.

calculi—in ten of which he performed primary nephrectomy—and six nephrotomies requiring secondary nephrectomy, making sixteen nephrectomies out of twenty-three cases.

Nickolich,[6] in giving his surgical experience with stones of the kidney from 1898 to 1902, reports twelve cases, eleven of which were septic and one aseptic. The aseptic case was treated by nephrotomy; three septic cases were treated in the same manner with two deaths. The remaining septic cases were treated by primary nephrectomy, with five recoveries and one secondary case, cured by secondary nephrotomy. In other words, out of eleven septic cases, there were six primary nephrectomies and one secondary nephrectomy with but one death; while three septic cases treated by nephrotomy resulted in two deaths.

Wagner[7] advises restricting the indications for extirpation. He speaks for nephrotomy whether or not pyelo- or hydronephrosis coexists. Secondary nephrectomy he would use as a last resort.

Obalinsky,[8] Rovsing[9] and others are in favor of nephrotomy and Korte[10] states that it not seldom happens that during a nephrotomy the kidney appears to have been transformed into a sac and the indication seems to be for extirpation; but, by leaving such cases, we are often astonished to note the return of the function to that organ.

Guyon and Albarran[11] also recommend conservatism, either nephrotomy or partial nephrectomy.

Zückerhandl[12] states that nephrectomy is indicated only when the kidney has become transformed into a fibrous mass and, when it has been shown that the function of the kidney is abolished.

Küster[13] recommends total nephrectomy whenever a very large stone causes atrophy of the kidney, also in some consequences of calculi, such as incurable pyelitis and closure of the ureter, which is sometimes found after removal of the calculi. This secondary condition I have already referred to in connection with one of the cases reported of secondary nephrectomy.

Case V.—This case is an example of renal tuberculosis. Patient, age twenty-five, presented himself in December, 1904, and gave the following family history: Father died of Bright's disease and aunt died at the age of thirty of pulmonary tuberculosis. Patient considered herself well until six months previously, when she noticed a pain in the right kidney region, severe in character and running down the thigh as far as the knee. This pain was irregular in duration, lasting from two to three hours and disappearing every two or three days. During the attacks of pain urination became markedly frequent, and when pain subsided the frequency abated. Urination was accompanied by burning in the region of the bladder. The patient grew progressively worse and in September her symptoms were so much aggravated that she often lost control of her urine by day and had constant nocturnal dribblings. The pain in the side became less frequent, remaining away for several days at a time.

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[6] *Arch. f. Klin. Chirurgie,* Volume LXIX, 1903.

[7] Dzerne: *Monatsb. d. Urologie,* Volume IX, 1904.

[8] *Ibid.*

[9] *Ibid.*

[10] *Ibid.*

[11] *Ibid.*

[12] *Weiner Med. Presse,* 1904.

[13] *Deutsche Chirurgie,* Volumes LII and LIII.

In October, two months previously, she urinated every fifteen minutes by day and night; there was continual incontinence. She entered the hospital early in December when all her symptoms were referred to the bladder. Cystoscopic examination was made and revealed an ulcerated area surrounding the right ureteric orifice and another one in the upper quadrant. Even under general anesthesia the bladder would retain but four ounces. The urinary jet from the right side was turbid. The right ureter could be felt through the vagina thickened and enlarged; the kidney could not be palpated. No attempt was made to catheterize the ureter. A diagnosis of right tuberculosis of the kidney, with secondary implication of the bladder, was made, and operation suggested and refused. At the instance of her attending physician the patient was treated by bladder lavage for three weeks. At the end of this time she had an acute febrile attack preceded by a chill, and her general health had failed considerably.

Operation was again suggested and accepted, December 24, 1904. A longitudinal incision was made over the right kidney, which was exposed and examined. An abscess was found on the anterior surface of the kidney. The pelvis was opened and found full of pus and there were cheesy areas near the cortex. The ureter was much thickened and, on account of the tuberculous history and general condition of the patient, the kidney was completely removed. Previous to this, however, the patient was turned on the opposite side, a small exploratory opening made and the left kidney palpated. The organ was found to be *in situ* and of normal size and feel. This wound was rapidly sutured and the operation completed on the right side. The patient was transfused during the operation and rallied very well and her condition continued satisfactory thereafter.

The patient left the hospital at the end of five weeks very much improved in general health although the wound was not entirely healed. Since leaving the hospital her general condition has continued to improve and she has gained in weight. She has regained control of the vesical sphincter and urinates generally every hour, sometimes retaining the urine as long as two and a half hours. There is still some nocturnal incontinence.

The following is the urinary report of the urine secreted at the present time by the remaining kidney: Quantity in twenty-four hours, 1440 cubic centimeters; urea, 28.16 grammes; albumin, a trace; some pus and mucus; blood, a few cells; no tubercle bacilli; very few hyaline casts; bladder cells (Figure V).

Examination of the specimen shows an incision in the abscess of the kidney on the anterior surface. The pelvis is markedly dilated running up in the calices. The microscopical examination yields the following report:

"A group of tubercles is present at the boundary zone and extends into the cortex. They have cheesy centres and some generally white cells. A very small abscess is also present. The tubercles and glomerleins in general show marked degeneration of their epithelial cells and some exudation in the lumen. Some hyaline casts were seen.

"The epithelium has entirely disappeared. The mucosa has formed and the mass of pus cells has disappeared. There are several tubercles with cheesy centres in the submucosa and some infiltration extends into the muscular coats."

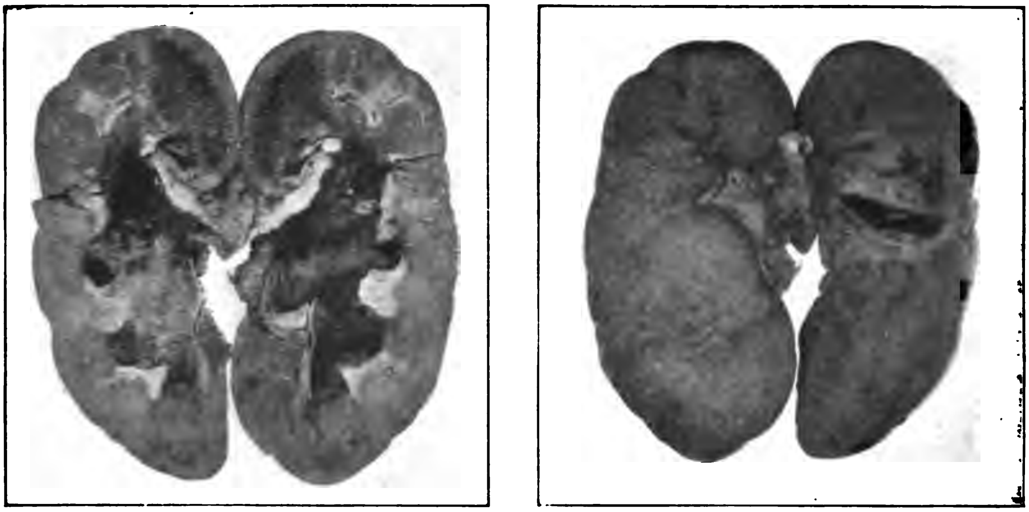

FIGURE V.—TUBERCULOUS PYELONEPHRITIS.

A diagnosis of tuberculous nephritis and suppuration involving the ureters and the pelvis of the kidney (pyelonephritis) was made.

The noteworthy features of this case are the predominant vesical symptoms that existed prior to operation and the notable relief of these symptoms after the main focus of tuberculosis had been removed. It is doubtful whether in this case any more thorough diagnostic investigation would be warranted, except an examination of the urine for tubercle, which was not obtained. An attempt to catheterize the ureter where there is a suspicion of tuberculous cystitis is doubtful wisdom; because the risk of carrying infection to an organ not involved must be feared. And there seems to be a general belief among authorities that primary tuberculosis of the bladder is seldom, if ever, encountered. It is also generally believed that, to obtain the highest degree of success, operation upon the kidney for tuberculosis of the urogenital tract should be radical. Therefore, in a case of extensive tuberculosis of one kidney—especially with a pyogenic infection as in this case—complete removal of the kidney is the proper course, if the presence of the second kidney is established and that kidney is in fairly good condition.

The general belief of some of the important surgeons who have reported upon renal work and the operative mortality is as follows:

Israel[14] reported thirty operations for tuberculosis, twenty-eight of which were nephrectomies with partial or total removal of ureter. There were eight operative deaths. About one-third of these cases were without bladder lesions. There were ten permanent recoveries.

Wyss[15] reports thirty-five cases of renal tuberculosis at the Zürich Surgical Clinic, with twenty-one nephrectomies and two deaths.

Kümmell[16] reports thirty-four cases of renal tuberculosis, of which thirty were treated by nephrectomy with twenty-seven recoveries and three deaths; seven patients were healthy two years later; four nephrotomies and pelvic operations, of which two died—a fifty per cent mortality.

Ramsey[17] collected three hundred four operative cases of renal tuberculosis, of which there were one hundred ninety-one nephrectomies, with one hundred six recoveries. Of fifty-five nephrotomies, fifteen patients died within one month and twenty-two later—a mortality of over sixty-seven per cent.

Newman[18] prefers nephrotomy early in the disease when localized to a small cavity and secondary nephrectomy as soon as nephrotomy is found to have been ineffective.

Legueu[19] recommends nephrectomy in advancing renal tuberculosis if the opposite kidney is sound; and he calls attention to the fact noticed in the case I have already reported that vesical and pulmonary lesions do not contraindicate operation and that the former improve after operation and even—at times—the latter.

Simon[20] reports thirty-five cases of renal tuberculosis in the Heidelberg Clinic. There were seven nephrotomies with one permanent recovery and twenty-seven nephrectomies with thirteen survivals.

In a later contribution to the same journal (1904) Kümmell cites the figures of Gerson of Boston, which include one hundred ninety-four personal and two hundred one operations reported from Gangs. The total mortality was 29.4 per cent. Kümmell does not recognize such a condition as ascending tuberculosis of the kidney.

My last cases, Numbers VI and VII, are cases of subcutaneous injury to the kidney producing rupture.

Case VI.—C. W. B., age forty-five, presented himself January 17, 1905. Immediately preceding admission to the hospital, patient was thrown from the seat of a baggage truck and was struck by the front wheel on the right side between the pelvis and ribs. He was not completely run over by the wheel and was not unconscious after the accident. Following the accident he had severe nausea and was dazed and complained of severe pain in his right side.

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[14] *Chirurg. Klinik f. Nierenkrankheiten,* 1901.

[15] *Beitrage z. Klin. Chirurgie,* Volume XXXII, Number I.

[16] *Arch. f. Klin. Chirurgie,* Volume LXXII, 1903.

[17] *Annals of Surgery,* Volume XXXII, 1900.

[18] *London Lancet,* Volume I, 1900.

[19] *Annal. d. Mal. d. Org. Gen.-Urin.,* Volume XIX, 1901.

[20] *Beitr. z. Klin. Chirurg.,* Volume XXX, 1901.

On admission to the hospital the general condition was good; no marked distention of the abdomen. There was rigidity of the right rectus muscle and a relatively greater resistance below the right costal arch; severe pain and tenderness in the same region, notably on deep pressure. A rounded mass is palpable in the kidney region. Severe pain on deep pressure over the right kidney both in front and behind. Urine bright red and cloudy; no sediment. Specific gravity 1010; albumin two per cent and, by the microscope, red blood corpuscles in abundance. Leucocytes, 14000. The patient remained in the hospital under close observation.

On January 22, five days after the injury, the urine continued to show an abundance of blood cells, many leucocytes and epithelium from the kidney.

The enlargement over the right kidney continued and the resistance became more marked. The patient's general condition showed evidence of failure.

Exploratory nephrotomy was performed January 27. A vertical incision was made in the left flank. After separating the perirenal fat, a large tumor the size of a child's head was reached. When this was incised it was found to contain the kidney and abundant blood clots. After removal of a free blood clot the hemorrhage became tremendously profuse. The kidney was quickly examined and found to be completely ruptured. A pedicle clamp was placed upon the renal veins; the ureter was ligated separately and then the blood vessels, after which the kidney was rapidly removed. The patient made a rapid and uninterrupted recovery (Figure VI).

Examination of this specimen shows a complete rupture of the kidney almost into two halves, and a number of areas of acute suppurations. Examination of the urine after operation shows that the functionating power of the remaining kidney is adequate. Patient was out of bed in two weeks, and out of the hospital one month after operation.

Case VII.—B. J. M., age twenty-five, entered the hospital January 25, 1905, suffering from rupture of kidney. Just previous to admission, while attending a fire, he was struck by a falling wall and rendered unconscious. When brought to the hospital he complained of considerable nausea but did not vomit. The pulse was rapid but regular; respiration shallow but otherwise negative; abdominal wall was rigid, more markedly over the right side. There was tenderness over the right kidney—front and back—and bimanual palpation recognized a large mass in the right kidney region. Some tenderness on the left side. Examination of urine showed the presence of blood.

Leucocytes, 15000. Blood in the urine continued to appear without cessation and the patient's condition showed marked failure.

On January 28, examination of the urine showed a diminished amount of blood, numerous hyaline, epithelial and granular casts, denoting secondary changes in one or both kidneys.

Exploratory nephrotomy was performed January 28. A vertical incision was made over the right flank. A large quantity of blood clot was found surrounding the kidney. The kidney was examined and found to be ruptured through the pelvis, including one of the veins. Further examination showed areas of secondary changes in the organ, and it was determined to completely remove it. This was accomplished after separately ligating ureter and vessels.

The patient was out of bed in two weeks after the operation and left the hospital about four weeks after the operation.

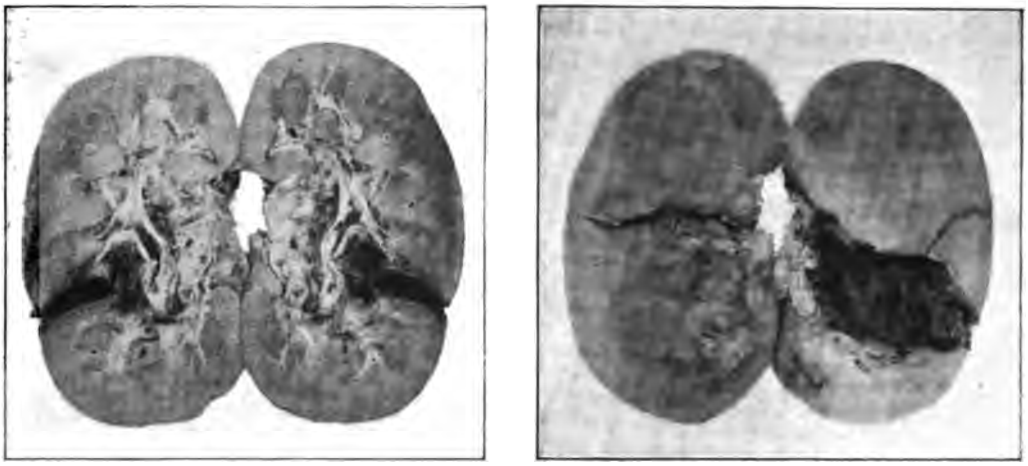

FIGURE VI.—TRAUMATIC RUPTURE OF KIDNEY.

Examination of the specimen shows a zigzag tear running into the pelvis through the kidney substances. The upper area reaches almost to the outer border. On the inside of the specimen are seen hemorrhagic areas, and in the cortex are some secondary changes necrotic in nature (Figure VII).

Microscopic examination by Doctor Sondern yields the following report: In the cortex, the capsules of Bowman are not thickened; but their lining epithelial cells are undergoing albuminous degeneration and are peeling off in places. The capillary tufts are congested, but nowhere compressed. The epithelium lining the cortical tubules is very markedly degenerated, swollen and peeling; so that in many cases it lies in the tubule lumen like a cast. Between and around the tubules and Bowman's capsules is a diffuse infiltration with polymorphonuclear round cells, especially marked near the capillaries around the convoluted tubes. In the medulla, many tubules contain cells and granular debris; others contain hyaline casts, and still others red blood cells. Large areas have lost their staining power and have been converted into a more or less necrotic mass. The connective tissue between the tubules is edematous and sometimes diffusely infiltrated with pus cells, but nowhere thickened with new connective-tissue cells or fibres. The blood-vessel walls are not thickened. Wherever the tubule walls exist Bowman's capsules are thicker than normal; this is due to purulent infiltration and not to connective-tissue increase. A mass of blood and fibrin is present in the pelvis of the kidney. *Diagnosis:* Acute, diffuse, suppurative nephritis.

In both of these cases of rupture a radical operation was performed; in one on account of the very extensive laceration of the organ and the continuation of the hemorrhage, and in the other because, while the laceration was not so extensive, there was evidence of beginning suppuration. It is possible that a tamponage and drainage operation in this case might have produced an efficient result; but the patient's general condition was so poor that it was deemed expedient to do a radical operation in order to render the postoperative period of convalescence as rapid as possible.

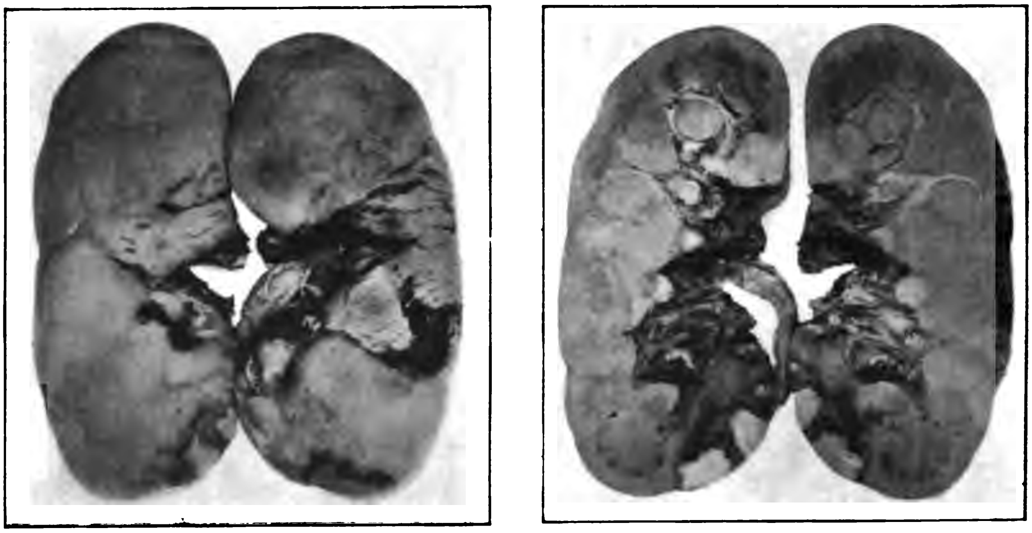

FIGURE VII.—TRAUMATIC RUPTURE OF KIDNEY.

The concensus of opinion of writers and surgeons seems to favor the conservative treatment of traumatism of the kidney. Brewer favors exploratory nephrotomy in all cases of severe contusion of the flank with hematuria. He reports six cases of kidney injury in which this course was followed. Four of the cases were treated by exploration only, and were sutured, tamponed and drained. The other two cases were treated by nephrectomy; one primarily, on account of the extent of the rupture; and the other secondarily on account of infection. Both of these latter cases recovered. One of the exploratory cases died, his condition appearing most hopeless at the time of operation.

Frisch and Zückerhandl[21] recommend purely symptomatic treatment in uncomplicated, mild and moderately severe cases of subcutaneous injury to the kidney; in profuse hematuria and extensive perirenal bleeding, immediate operation. They state that in theory the rational treatment is immediate extirpation of the diseased kidney by the lumbar route; but that it is extremely difficult to fix the danger limit, as spontaneous recovery has occurred after severe repeated hemorrhage with collapse.

Israel, in one of his cases of injury to the kidney, which was treated conservatively, found operation was necessitated later on account of hematogenous infection.

In Wagner's résumé of literature relating to the kidney, Schmidt[22] reports a series of fifty-five subcutaneous injuries to the kidney in the Prussian army. There were fifty contusions, all of which ended in recovery, and five lacerations or ruptures, all of which ended fatally.

Küster, in giving the indications for nephrectomy, in his "Treatise on Surgical Infections of the Kidney,"[23] says that in subcutaneous injury, nephrectomy should be performed when the kidney is completely crushed, partial nephrectomy when only partially crushed, and nephrectomy in very severe injury involving the ureter; nephrectomy whenever a crushed kidney begins to suppurate.

As a result of my study of the features of these personal cases just related, and an examination of the general literature on the subjects involved, certain deductions and general conclusions seem to me to be justified and are submitted for your consideration and discussion.

(1) In profuse suppuration of the kidney, or multiple abscess of either kidney, there is a question whether nephrotomy or nephrectomy should be primarily resorted to—a question that can only be properly decided upon the merits of each case involved.

(2) There is no doubt that a very small remnant of kidney structure may perform a certain amount of renal function; and primary nephrotomy and drainage will often give time to decide this question more satisfactorily; and some patients may sustain a secondary better than a primary nephrectomy.

(3) General systemic infection may be considered an indication for both primary and secondary nephrectomy.

(4) As to lithiasis: The same rules may be applied in the treatment of the kidney itself as are employed in suppuration with renal calculi.

(5) There is no question that nephrotomy is the operation indicated in aseptic lithiasis.

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[21] "Handbuch f. Urologie," 1904.

[22] *Deutsch. f. Militai-Arztl. Zeitschrift,* Volume XXXI, 1902.

[23] *Deutsch. Cuirurgie,* Volume A and B.

(6) As to tuberculosis of the kidney: Even when there is a vesical and pulmonary involvement, the only resort of reasonable promise is nephrectomy when the integrity of the opposite kidney is established.

(7) Generally speaking, in urogenital tuberculosis, removal of the primary focus, which is frequently in the kidney, is likely to exercise an inhibitory influence upon the distal implication—as, for instance, vesical involvement.

(8) In subcutaneous injury to the kidney, where there is evidence of a perirenal tumor with hematuria, immediate exploratory incision should be employed and, when possible, suture and tamponade should be resorted to.

(9) Where the vessels or ureter have been ruptured and the laceration of the kidney is extensive, or where the injuries are complicated by beginning or progressed suppuration, total nephrectomy may be necessary.

(10) Conservative operation is favored by a majority of authors and symptomatic treatment is considered effective in mild cases.

(11) A safe rule is to resort to exploratory incision in all doubtful cases and to perform extirpation only when necessary.

(12) Above all, too much stress cannot be laid upon the importance of the refinement of diagnosis and the advantage of having recourse to the most improved methods of investigation.

(13) The great and progressive reduction of mortality is attributable to diagnostic improvement. Marked differences in mortality between different operators may be explainable by the failure to employ the latest diagnostic resources.

Finally, we may say: What the compass, the sextant, and the chart are in governing the route of the navigator, so are the microscope, the cystoscope and the *x*-ray in directing the course of the surgeon through the obscure realm of kidney surgery.

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ASCENDING NEURITIS.[*]

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It is very evident that, if we are ever to make much progress in the prevention or cure of the many forms of disease which have in the central nervous system their most destructive effects, we must come to recognize the beginnings of the morbid processes before the spinal cord or brain are invaded and hopelessly impaired.

Disorders of nutrition, whether inflammatory or degenerative, soon result in permanent damage when the central neurons of brain or cord are involved. Myelitis either focal or disseminated, or a gradual impairment of neuron vigor and resistance, by reason of which sclerosis in some form insidiously replaces the neuron elements, make up the gross pathology of a large majority of the diseases of the spinal cord. But that antecedent step—the cause that excites the inflammation or operates to lower neuron resistance, and so permits of connective tissue encroachment—is what we need to discover and prevent, for by the time the myelitis or sclerosis is well established irreparable damage has been done. When we discover processes operating in the system such as are prone to attack the central neurons, but which for a period before such invasion takes place manifest this tendency by a series of functional disturbances only, or by symptoms referable to the nerves, the peripheral distributions of the neurons, rather than the cord or brain, we are in many such disorders given ample time in which to employ therapeutic means which may ward off the graver consequences which oftentimes result.

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[*] Read before the Michigan State Medical Society, at Petoskey, June 28, 1905.

In a certain and not inconsiderable proportion of the spinal cord disorders which we now classify as sclerosis (primary lateral sclerosis, combined sclerosis, posterior spinal sclerosis), nutritional disturbances are undoubtedly the starting point in the pathological process, weakening the resisting and assertive power of the neuron elements and permitting the encroachment of the connective tissue.

When we are able to say what this defect in nutrition consists of which leads to such result, we will at least have a much clearer conception of the pathology of these scleroses and perhaps be better able to prevent them.

It is this lack of knowledge of the preliminary steps which lead to structural changes in the central nerve tissue that makes our therapeutics oftentimes so indefinite and ineffectual. Disorders of nutrition, when they are of such a nature as to attack the peripheral neurons which make up the various nerve trunks, must of necessity exert a deleterious effect upon these neurons throughout their entire extent, cell bodies as well as prolongations.

We are too prone to imagine an artificial boundary line in our conception of central and peripheral diseases of the nervous system; especially in the distinction we make between diseases of the spinal cord and the peripheral nerves, forgetting that the nerves are but extensions of neurons whose cell bodies have their seat in the cord or in the posterior root ganglia within the spinal canal.

It is true that a cut, a bruise, or a localized inflammation in a limb may affect the peripheral portion of a neuron to the exclusion of its body located as it is in spinal cord, or brain, but even then it must be conceived that the cell body is itself more or less impaired by reason of such injury to its branches.

But when the injurious influence is one that has its origin in the nutritive fluids of the body which have access to all portions of the neuron simultaneously, it must be presumed that there is a lowering of vigor of the neuron throughout its entire extent, even when the symptoms observed call attention mainly to disorder of the peripheral distribution of the nerve. It is common for us to recognize that the nerves are impaired when their cell bodies in the spinal cord or brain have been damaged; it is not so common for us to recognize that the cell body must likewise suffer when its extensions in the nerves are diseased. Of course the damage in the latter case is not usually so serious when first it gives rise to symptoms, for in one case it is the citadel that is attacked and in the other only the outposts. But there are times when the attack on the outposts gives access to the citadel, and others when the invading force is attacking both outposts and citadel at the same time.

There are many nutritional disorders—such as the autotoxemias, conditions resulting from incomplete katabolism of waste products—in which the delicately organized nerve tissue, whose duty it is to stand sentinel over the various and complex grosser tissues of the organism and signal the evidences of disorder in any of them, is the first to suffer. It is in the prolongations of the neurons, the nerves, where the first signs of such disturbance take place. Paresthesias, such as numbness, prickling, burning sensations, are the signals sent out by the sensory nerves; while stiffness and soreness in the muscles, and impaired movement, are the signs of the involvement of the motor fibres. Somewhere in the course of the nerve trunk there is tenderness on pressure, and this is often at many points on the same nerve and usually, when the cause is a systemic one, located at some point on many nerves. These are the characteristics of a disseminated neuritis.

These preliminary remarks are called for in order that we may have a correct appreciation of the significance of disseminated neuritis as the first manifestation of an invasion which not infrequently leads to serious structural changes first in the central nervous system, and then in turn in many outlying parts such as the joints, the muscles, the ligaments and the skin, which by reason of impaired nutrition in the nerves and nerve centres controlling them undergo trophic disturbances causing deformities and loss of functions in these parts.

I think I have at hand sufficient evidence to justify the conclusion that disseminated neuritis is a preliminary stage in arthritis deformans as well as of many other articular deformities and muscular dystrophies, and it is my belief that in the careful study and correction of the constitutional causes that give rise to disseminated neuritis we will ward off many forms of disease that have up to the present been found to be quite intractable. Among these are several diseases of the spinal cord such as some forms of myelitis and sclerosis.

I have in the course of the last fifteen years had my attention called to the possibility of a neuritis of this character extending upward and, after invading the plexus or trunks from which the nerve at first attacked has its origin, passing into and involving the cord structure itself.

I do not now refer to what has long been known as *Neuritis Migrans,* which is an ascending form of neuritis usually confined to a single nerve trunk. There is here in all probability an infection of the nerve sheath at the primary seat of injury and this infection is propogated along the nerve. An ascending neuritis of this nature is often seen to originate from a seat of inflammation, as a diseased joint or an abscess. I recall one instance in my hospital experience where a neuritis of the brachial plexus resulting from tubercular inflammation of the cervical glands extended gradually upward in the perineurium as a tubercular inflammation until it entered the spinal canal and excited at the seat of invasion a localized tubercular meningitis and myelitis which proved fatal; and another where an injury to the hand in the area of distribution of the ulnar nerve necessitated successive amputations by reason of a progressive infection along the nerve.

Cases of ascending neuritis of this character are sufficiently well established and no doubt many of my hearers can recall instances of such in their practice. Yet fortunately such cases never have been very common and are much less so now with our improved surgery and careful antiseptic precautions.

Aside from cases of this nature where it is plainly evident the disease has gradually progressed upward from a primary point of infection in a nerve, an ascending neuritis has not been very clearly recognized by authors on Neural Pathology. In a discussion by Strumpell of the etiology of acute and chronic myelitis in his textbook of "Medicine" (page 583), he says, "The theory of an ascending neuritis—that is the supposed extension of an inflammation from the nerves to the cord—is a hypothesis that is still very much in need of further confirmation." Such confirmation I believe I am now able to present from a number of clinical observations in different cases of disseminated neuritis which have come under my care during the past few years both in hospital and private practice. I will select but two of these for illustration, for they are fairly representative of all, and as they both have been under close observation from the beginning there can be no doubt as to the manner in which the invasion of the central nervous system has taken place.

* * *

A. N., male, age thirty-three, American, married, farmer. Nothing significant in family history except that one brother died at age of twenty-seven from spinal meningitis following an attack of "la grippe." Always well and strong and a steady and hard worker in boyhood and manhood until the onset of present trouble in February, 1903.

The first thing he noted was pain, somewhat intermitting, in the right upper arm and shoulder. Later the pain extended to the neck and up the back of the head on the right side. This continued without much change for some months. I saw him first in February, 1904, at which time in addition to the pains and soreness in the right arm, shoulder and neck, he could not make much use of the arm. He also at that time complained of some weakness of the right leg but of no pain in it. He had difficulty in straightening out the fingers of the left hand, extending the arm, or in so moving it as to put his hand in his pants' pocket. He still complained of pain on motion of the right arm and shoulder and in the neck and avoided movements of and pressure on these parts because of the pain. He had a cough at this time and the coughing increased the pain. His temperature was 100.4° Fahrenheit.

Examination revealed great tenderness on pressure over the divisions of the right brachial plexus in the neck and of its branches in the shoulder, arm and forearm, especially of the ulnar branch. In addition to this there was tenderness of the nerve trunks over the body generally, those of the trunk, both right and left sides, and of the lower extremities as well, but the tenderness was much accentuated in the right brachial plexus.

His appetite was good but his tongue was coated and his bowels constipated. His urine was heavily loaded with uric acid. No trophic changes, and the system appeared well nourished. I did not see him again until October 1904, at which time I found him much more helpless. A numbness had spread over the right arm, in patches over the trunk, over the anterior surface of the right thigh and to some extent it was noticed in the left arm. He had had shooting pains in the neck, right shoulder and right arm; at times he had been unable to straighten his right leg; at other times he could not flex it. A tremor had developed in his legs, so violent at times as to shake the entire body. The muscular sense was now impaired so that with his eyes closed or in the dark he could not tell the position of his arms or legs. He had been compelled by the extension of the disease to resort to the use of a cane and finally to crutches. Examination showed the nerve tenderness present but not so marked as before, for now anesthesia and partial analgesia was found to be present over the area which he spoke of as being numb.

The knee jerks were much more exaggerated and ankle clonus was present; more decidedly on the right.

There was yet no trouble with the action of bowels or bladder other than a somewhat obstinate constipation.

In November, 1904, the patient was brought to the University hospital on a cot in a helpless condition with a well developed transverse myelitis with its upper level at the fifth cervical segment of the spinal cord. Trophic changes were even seen in the muscles of the right hand, forearm and shoulder, and he was unable to raise this hand to his head.

Vesical and rectal incontinence had developed and a cystitis complicated the symptoms. There were still some evidences of a generalized neuritis and the temperature averaged about 100° Fahrenheit with less than a degree variation in twenty-four hours.

There has been in this case no evidence of any other infection except that of autotoxemia to account for the beginning neuritis or the later myelitis. For although he has had from time to time a purulent discharge from his right ear, frequent examinations of his blood, urine, and cerebrospinal fluid, and cultures made from these fluids have resulted in no evidence of bacterial infection.

From the evidence which this case presents it would appear that the cervical myelitis was secondary to and the direct result of an extension into the cord of a right brachial neuritis, which neuritis was of the interstitial disseminated form, affecting the nerves generally throughout the body and of autotoxic origin. Treatment of the patient on this conception of the pathology has resulted in slow but steady improvement.

* * *

The next case is that of A. M., aged sixty-four, widow, the mother of four children. Her father, who died at the age of seventy-five, was an invalid fifteen years before death. He had some form of "spinal trouble" which was spoken of as a "crick in the back." He had difficulty in walking but was about on his limbs up until the last year of his life. During this last year he was entirely helpless. He had lived a life of much hardship and exposure.

Of the patient's five sisters one died at the age of sixty-two of cerebral apoplexy.

Of her six brothers the three who still live are all sufferers from rheumatism. One died of rheumatism and jaundice and another of cerebral apoplexy at sixty-two.

As a child the patient was well and strong. Was married at seventeen and all four pregnancies and following labors were normal except that, following the last confinement, she was troubled with a weak back for some months. From time to time during a number of years she has suffered from "lumbago." Five years ago she began to suffer severe pain in the right side which extended around the body from the lumbar muscles and was found to be due to inflammation of the lumbar nerves and the abdominal branches of the lumbar plexus. A disseminated neuritis, apparently rheumatic in origin, was found to be present at this time and treatment on this assumption brought prompt relief. One year ago a small growth was removed from the right breast from which operation she made a good recovery. Nine months ago there was a return of the neuritis and now while it was generally distributed it was felt most decidedly in the lower intercostal nerves of the left side though those of the right side at the same level were also quite tender. Blistering for a time in this locality gave relief but the progress of the disease was only retarded and within a few weeks a feeling of constriction across the abdomen at the level of the umbilicus was a very constant symptom. About the same time she began to lose feeling in the limbs, and later there was weakness in motion. She now became confined to bed and moving the body in bed so as to compress the tender nerve trunks or even slight direct pressure on the nerves would cause cramping of the abdominal muscles and of the limbs. Voluntary efforts at evacuation of bowels and bladder brought on this pain and cramping, and seriously interfered with these functions.

Later a persistent feeling of constriction about the abdomen at the waist line developed, the limbs gradually assumed a state of spastic rigidity and all feeling finally disappeared below the waist line. Loss of control of rectum and bladder is now present and atrophy of the muscles of the legs is quite marked, though so far there is little or no trophic change noticed.

There are here the characteristic signs of a transverse myelitis with the upper level of the lesion at the eighth thoracic segment of the cord. No involvement of the cord is found above this point, although the upper thoracic nerves, especially on the left side and those of the neck and arms, as well, have had frequent acute attacks of neuritis attended by vasomotor and cardiac disturbances.

A marked condition of arteriosclerosis complicates the pathology in this case, and this, taken in connection with the age of the patient and the evidences of arterial degeneration, as shown in the family history, were enough to give a very unfavorable prognosis from the beginning of the spinal cord invasion.

* * *

I think we are accustomed to regard neuritis, especially the simple interstitial or even the disseminated interstitial form, as a disease of slight consequence, and perhaps in the majority of instances we are justified in this belief. When, however, this form of inflammation affects the nerve trunks of a plexus or the branches in close proximity to the spinal cord or cranial foramina the danger of the upward progression of the inflammation should not be overlooked.

I have on record the histories of some acute cases of this nature in which the disease ran a much more rapid course, invading the cord with fatal termination within a few days, but I have chosen these cases especially because they have afforded the opportunity during their protracted course for frequent observations and examinations of the patients, and have therefore left little room for doubt as to cause and manner of the spinal cord invasion.

THE PSYCHOTHERAPEUTICS OF NEURASTHENIA.*

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Neurasthenia, nervous exhaustion, or nervous prostration, as variously designated, is but too common a condition at the present time. True neurasthenia is always acquired, but in addition, we may have a hereditary and a symptomatic form. It is the true neurasthenia alone which we will consider here.

Neurasthenia occurs at all ages, some cases being found among children and others in old age, but the greatest number of cases develop in early adult life from twenty-one to thirty-five years of age, when the strain and stress of life are greatest.

In the majority of cases there is a history of overwork—physical or mental—combined with worry and anxiety. In all cases there is probably this factor of overwork, though it may not appear in the history as the individual's particular limit of endurance may be so low that only the average, or usual amount of work is too much for him. In addition we find emotional shocks, grief, excesses of all kinds, exposures and injuries have an influence in the development of neurasthenia.

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*Written for the Michigan State Medical Society, June 30, 1905.

The neurasthenic state may be produced by the introduction from without of substances toxic to the nerve centers, and may similarly arise from the entrance into the circulation of substances toxic to the nerve centers generated within the body. Thus we find neurasthenia associated with uric acid in the blood and with toxines from the gastrointestinal tract. A condition of anemia produces neurasthenia.

Pathologically neurasthenia is an exaggerated, an abnormal fatigue of the nerve cells. The studies of Hodge, Mann and others have shown that nerve cell fatigue is attended by a more or less degree of chromatolysis, in which condition their function is depressed or abolished. Under normal conditions these fatigued cells, after a certain period, some hours or so, of rest, resume their usual appearance and the arrangement of their constituents is such that normal function is again possible. If, on the other hand, these fatigued nerve cells are compelled to continue functioning without proper intervals of rest, we have a more intensified condition of chromatolysis and neurasthenia results. If emotional strain, either alone or joined with overwork, is brought to bear with sufficient intensity and duration on brain cells, the same uncompensated exhaustion manifests itself in the internal structure and appears outwardly in our especial case as neurasthenia. Toxic or autotoxic substances may produce this chromatolysis, either acute or chronic, and again we may have neurasthenia manifested.

This impairment of the nerve centers secondarily involves impairment of the whole organism. There is a lowering of all the vital forces. The sympathetic system becomes irritable as manifested by the symptoms dependent on its disturbance. A vicious circle is set up. Primarily the fatigue of the central cells depresses the action of the organic sympathetic centers; then the metabolic processes being disturbed in this way, secondary irritations arise due to the imperfect assimilation and elimination of the products of metabolism, and continuously operate on already devitalized nerve centers. The higher or psychic centers are the ones primarily affected, making neurasthenia a psychic disorder.

With Gower we feel that "no description, however lengthy, would embrace half the varied manifestations of mere nervous weakness." The lengthy history, with its varied, variable and vague symptoms, constitutes a true characteristic of the disorder.

The first symptom is often a disturbance of sleep. As the highest centers are involved, and in them their highest capacity, we find as early symptoms, mental irritability and excitability, diminished directing power, or capacity for continuous thought, lessened ability to fix the attention, incapacity to perform either habitual tasks, or the complex relations of social life, great depression, inability to make decisions, difficulty in recalling memory images, self-concentration and morbid introspection preventing outer concentration, lessened spontaneous mentation, conditions of fear and apprehension, great physical fatigue, a conscious difficulty in mental and physical exertion, headache.

In addition there may be symptoms on the part of all the special senses though these are generally functional and usually of a painful character. General sensibility is not greatly disturbed. There may be pains dependent on a neuritis, or paresthesias which may be purely subjective or also dependent on a neuritis.

The motor symptoms are weakness, tremor, exaggeration or depression of the deep reflexes. The digestive, circulatory, respiratory and genitourinary systems may all add symptoms to this picture; as well as the various secretory glands. The disturbance of the vasomotor system gives characteristic symptoms. There may be painful flushings, blushing, dermographia, or edemas. This instability of the vasomotor system is in great measure the cause of the extreme variability of the symptoms and inconstancy of the same. A certain set of nerve cells at one moment may receive an increased blood supply through vasomotor dilatation at the expense of neighboring cells, so there is no harmony of action; and, this dilatation being soon followed by constriction, the cells are again rendered inactive. This inconstant blood supply keeps the cells irritable from insufficient or unbalanced nutrition, and the symptoms peripherally are in accordance with the central changes.

The diagnosis of neurasthenia is made by the exclusion of any organic disorder through a thorough examination of the patient and careful anaylsis of the various secretions and excretions.

Neurasthenia may be confounded with the early stage of some forms of mental disease, as with general paresis, for instance; but in neurasthenia though there is difficulty in the mental processes, there is no absolute failure, the patient retains the reasoning power, can perform acts and adjust himself to his surroundings. In neurasthenia, without demonstrable pathological change in the nervous system, we have a condition of simple pathological depression in which, as Bevan Lewis states it, "there is a failure in object consciousness which invariably inaugurates a corresponding rise in subject consciousness and which we have reason to infer implies a diminished functional activity in those realms of the cerebrum correlated thereto." "The negative states predominate in neurasthenia." And it is these symptoms which guide us in the treatment of neurasthenia. The psychical symptoms above all must be met. The subject consciousness must be exchanged for the normal object consciousness.

There is nothing more debilitating mentally and physically than self-pity, and we find this attitude of mind accentuated in neurasthenia. With all the thoughts and interests of the patient centered within, it is difficult, if not impossible, to bring about a natural, healthful condition of the body generally. This mental depression and preoccupation correspondingly depress all the organic functions. You cannot have a good circulation when the mind is occupied with a fear of insanity, or apprehends an approaching disorder of unknown character. Nor will the gastric secretions be normally produced nor act normally under such conditions.

For the time being the patient's mind must be taken possession of, and dominated. The inability to make decisions must be met by the physician, the thoughts and feelings, as well as actions of the patient, must be controlled and directed by healthful suggestions. These suggestions must be varied to meet the different conditions. As the degree of fatigue will vary, so will the symptoms, and the necessity for outside influence, to put the mental functions in motion. The mental inertia must be overcome but always judiciously, the underlying pathology of fatigue—exhaustion—being kept in mind.

First, then, must be won the confidence of the patient and a careful examination generally accomplishes this. Having this confidence and being able to assure the patient the condition is not a serious one, time with proper treatment will give a successful issue to the case.

As the basis of the trouble is one of fatigue, and this is generally based on nutritional disturbances, the main indications are for rest and nutrition, and these entail further care regarding elimination and exercise.

In extreme cases the pure rest treatment, according to Mitchell, or to Playfair, must be employed for a time. Then gradually the time in bed is reduced, voluntary exercise is prescribed and some mental diversion added according to the nature of the case.

In a great number of cases it is not necessary, neither is it best, to interdict all work either mental or physical, but the patient may be allowed to carry on a part of the usual occupation, as, for instance, a student carrying a certain number of hours a week may be allowed a limited number of hours of such work at least disturbs him. In this way he does not become disheartened nor lose his grip on life to quite so depressing a degree. Under these circumstances it is generally best to see the patient daily, to keep in touch with his mental condition, to supply courage and arouse hope, and in fact to allow a complete unburdening of the patient's mind. This daily unburdening relieves the patient greatly and minimizes the necessity of such complaints.

Every day comes the same tale of woe, the same wails, the same lack of faith in the desired outcome of the case, yet after some weeks it will not be quite so hard to interest the patient in other things, the depression will be relieved for a longer time, and finally the patient begins to believe for himself that life is a good thing, that he has a work and is able to do it. Then for a time the ambition must be curbed and the amount of work and alternate rest carefully regulated. The patient must be taught the physiology and hygiene of his higher nerve centers. He must be shown that nature will be revenged if she is abused, that fatigue must be followed by a proper period of rest, that with care the nervous system becomes a source of joy to its possessor rather than one of torment. If this teaching could be given earlier the cases of neurasthenia would be few.

Static electricity and hydrotherapy are of great value in the treatment of these cases. The static treatments should be given daily, or if the patient is in an institution, twice a day, for ten minutes, nine minutes being given up to the breeze, while a discharge of sparks from between the shoulders over the organic spinal centers finishes the treatment.

The patient should always be closely attended during treatment, as all of them are apprehensive and nervous, and it is during this treatment that the daily interview may take place.

Hydrotherapy, in the form of cool salt sponges, the salt glow followed by alternating hot and cold pours in the mornings, and a warm bath at bedtime at least three times a week, is most efficient.

It is generally necessary to overfeed and this is done by increasing the number of meals rather than the quantity of food at each meal. It is a good plan to give between meals and at bedtime a glass of milk. This may be cold or hot according to taste, and may be varied by substituting broth, cocoa, or an eggnogg, once in a while. If necessary stomachics and digestives may be added, and, as a rule, a sedative nerve tonic hastens the cure.

As to time, an average case takes about three months' time for recovery. The less medication employed the better. Nature will do a great deal in these conditions, if by general management of the physical symptoms and special attention to the psychic symptoms, we keep the patient in such mental state that she has opportunity to act.

TRANSACTIONS.

WILLS HOSPITAL OPHTHALMIC SOCIETY OF PHILADELPHIA.

STATED MEETING, MAY 8, 1905.

DOCTOR McCLUNEY RADCLIFFE, PRESIDING

DISCUSSION OF TOPICS.

"*IRITIS.*"

DOCTOR S. D. RISLEY spoke of the etiology of the condition. It usually begins, he said, with congestion of the uveal tract, exudates taking place from diapedesis. The form of the disease depends upon the character and the extent of the exudate. An embryologic study of the uveal tract shows that it is a mesodermic structure, and that it is therefore subject to the same dyscrasies that other mesodermic structures are. The classification of the disease may be considered first from the pathological peculiarities depending upon the character of the exudate—as serous, plastic, and purulent; or there may be a clinical classification, or an etiological one. In the first, it is hard to draw any hard and fast line of difference. The etiological classification is by far the best. The frequency of cause is as follows: syphilis, rheumatism, and traumatism. The irites which are due to rheumatism or syphilis are both of the plastic variety. The serous form occurs in poorly fed people as a rule. The suppurative type is associated with two factors; that which is dependent upon ulcerative conditions of the cornea, and that which is due to traumatism in which bacteria have been carried in to the eyeball. In a few instances he had seen an iritis associated with an endometritis, and in one case with gonorrhea. He stated that foreign writers had published a great many cases which were dependent upon the presence of tubercle bacilli, but he had not personally ever seen an instance in which he could with certainty say that the condition was due to that cause. He had seen iritis associated with disease of the ethmoid sinuses and swollen turbinates.

Doctor Frank Fisher gave a brief account of the symptomatology of the condition. He stated that when the inflammation is mild (either simple or serous), there is a slight injection of the conjunctiva beginning at the limbus of the cornea and extending outwardly, this process to supply blood to the inflamed parts recurring. Pain—a variable symptom, which may be on the brow, the cheek, or the side of the nose, and which is aggravated at night, succeeds this symptom. A very early sign is discoloration of the iris tissue which is quite noticeable if the condition be monocular. There is turbidity of the aqueous humor. The retina is more vascular, and later, the ciliary injection changes from a rose tint to that of red or purple. If the aqueous humor is turbid, deposits are left on Descemet's membrane; if there is a great amount of exudate, hypopyon results. Photophobia and lacrymation may be mentioned as early symptoms. Where there has been a great amount of lymph outpouring, intraocular tension is increased; but in cases in which the iris is drawn backwards, tension is decreased. Punctate keratitis and Descemetitis are different conditions. (Seventy per cent of cases of the punctate form are due to syphilis). In the parenchymatous variety of the disease suppuration follows, and is always accompanied with great pain. The most difficult type of the disease to detect is the sympathetic. The first symptom is loss of accommodation: later, changes in the choroid, and exudates into the vitreous, particularly in its anterior portion, can be seen.

Doctor William Zentmayer stated, in regard to prognosis, that in case the disease is seen early and synechia are not formed, the result will be good. The serous form is not as favorable as the plastic variety. If the condition is due to traumatism, prognosis is excellent unless an element of infection is introduced. If the sympathetic form of the disease in association with excessive plastic exudate and posterior synechia comes on insidiously, or where the disease is caused by diabetes, prognosis is grave.

Doctor Charles A. Oliver spoke on the treatment of iritis. The cases, he said, can be combated successfully when recognized early. In his practice he had found that the proper thing to do at the first visit is to alternate the various iridoplegics and cycloplegics, commencing with scopolamine, and later continuing with atropine. He never employed cocain for better endosmosis of the other cycloplegic agents if there was any danger of infection. He believed it better to place a cycloplegic agent in the other eye whenever possible. He had found heat very useful. He had learned to depend a great deal upon the judicious employment of dionin. He had not seen much good in the use of subconjunctival injections though he had faithfully and judiciously employed them in the correct manner. General therapy in the endogenous forms of the disease must be applied to successfully combat the condition. In syphilis, he relied upon the careful use of protiodide of mercury and mercurial inunctions. He had permanently relieved the iris condition in two undoubted cases of tubercular iritis by injections of antituberculin. In noninfected traumatic iritis he made it an unalterable rule if possible, to exercise protuberant bruised areas of iris tissue. In the infected forms of octogeneous type, he had had good results in saving more or less useful eyeballs by incision, removal of infectious material—local application of formalin and iodoform with the insertion of Kalt's sutures through a peripherally placed central section. Iridectomy for mechanical purposes—but not in the sympathetic form of the disease—had proved itself of much value in the chronic forms of the disease.

Doctor P. N. K. Schwenk said that he had never seen nodules in or on the iris in the rheumatic varieties of the disease. In syphilis, he had found that the nodules appear in the second stage, and that they are found in the major or minor circles of the iris. Punctate keratitis, he believed is due to syphilis, and not to the other dyscrasias. He had seen two cases of tubercular iritis. His treatment of most of the forms of the disease consisted in the local use of atropine: and in both eyes if the patient can afford it. With Doctor Oliver, he believed that perfect rest of the parts is essential. As to the use of ice, he employed it preferably one hour at a time out of every three hours. He used inunctions and thought well of protiodide internally. He believed that if the case be seen early, prognosis is good. He had seen iridectomy do good in selected cases. He had found a useful plan in some of the cases of the punctate form of keratitis, to remove the crystalline lens and to flush the anterior chamber.

Doctor S. Lewis Ziegler said that in serous iritis positive galvanism applied to the eye most certainly shortened the duration of the disease. In addition, leeching or pilocarpine to stimulate lymphatic circulation is very important. Turpentine mixture is valuable. He believed that heat is best used except in cases in which there is pus in the ciliary region: in such cases he had obtained better results from the local action of ice.

ORIGINAL ABSTRACTS.

OBSTETRICS.

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APPENDICITIS AND PREGNANCY.

Webster (*Surgery, Gynecology, and Obstetrics,* July, 1905) gives this subject a brief consideration. It is only in recent years that appendicitis complicating pregnancy has received much attention. It is not thought that pregnancy predisposes to appendiceal diseases except in a mechanical way, and even then only perhaps secondarily. The danger of appendicitis during pregnancy is of course increased, on account of the complications liable to arise, as the uterus enlarges, thus stretching and breaking up protective adhesions, pressing on an abscess cavity, et cetera. Slight attacks of appendicitis may have no influence on gestation. However, if suppuration follows, discharge of the ovum is liable to occur.

The diagnosis is rendered uncertain because of the fact that a number of the signs of appendicitis may be characteristic of the pregnant state. Pain, nausea and vomiting, leucocytosis, and other less important symptoms, may all be accounted for as due to pregnancy. The occurrence of fever with pain in the right side and nausea should excite suspicion of appendicitis, although gall-bladder disease, or renal involvement may be difficult to exclude.

The treatment of appendicitis in early pregnancy should consist in immediate operation and removal of the diseased organ. In the last weeks, *accouchement forcé,* in case no abscess has formed, with subsequent laparotomy, would be the proper procedure. W. M. S.

PEDIATRICS.

By ARTHUR DAVID HOLMES, M. D., C. M., Detroit, Michigan.

THE INFLUENCE OF THE FIRST AND SECOND DENTITION PERIODS IN THE ETIOLOGY OF EPILEPSY.

Spratling (*Medical News,* December 10, 1904), in a paper which is based upon the careful investigation of some two thousand cases of epilepsy, studied from the point of view of etiology, considers the effect of the phenomena of dentition upon the causation of convulsions and the subsequent development of genuine epilepsy. These conclusions ar noted: (1) Difficult dentition, that is, piercing of the gums by the tooth, may, in suitable subjects, constitute a sufficient irritant to cause convulsions. (2) In suitable subjects these convulsions may lead to epilepsy. (3) By suitable subjects is meant infants who inherit a neuropathic tendency to disease; whose parents had epilepsy or insanity, or who were alcoholic or suffered from some other general vice that could be transmitted to the offspring in form capable of vitiating its powers of resistance to disease. (4) Difficult dentition alone in the child who inherited no ancestral taints, and who at birth is free from a tendency to nervous disease cannot cause epilepsy. (5) Great caution must always be exercised to lay the true cause in cases of this kind where it belongs, for the reason that gastrointestinal disorders, the sequelæ of eruptive fevers and other factors common at this age may produce similar results.

ORTHOPEDICS

By IRA DEAN LOREE, M.D., Ann Arbor, Michigan.
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CANTIVELL'S OPERATION FOR COMPLETE EPISPADIA.

Cantivell, surgeon to Saint Francis' Hospital, Trenton, New Jersey (*International Journal of Surgery* for March, 1905), describes this operation as follows:

The aim in this operation is to restore the parts to their normal relations. To do this is simple. Loosen the urethral gutter completely, separate the cavernous bodies, place the urethra in its normal position beneath these bodies and bring them up over it, then with a few well applied sutures a normal organ is made.

It is necessary first to drain the field of operation from below by the establishment of a perineal fistula. A finger is inserted into the bladder and pushes out the perineum. A few strokes of the knife on to the finger suffice. If the opening at the infundibulum is too small for the finger, a steel sound may be used. In order to keep the perineal opening patulous, a specially devised drainage tube, or a piece of ordinary tube stitched fast to the skin, is needful. The question arises whether to operate on the penis immediately or not. There is no reason for waiting, except that the ever-present excoriations may be a culture bed of bacteria, and so make it impossible to have a clean wound. In my own two cases I waited for ten days.

Where the urethra joins the skin in epispadia there is a distinct line of scar tissue on either side. It is along these lines the incision should be made to dissect loose the urethra. These incisions should be made to join above the infundibulum at the pubes, and are carried out to the extremity of the glans penis. They should be as deep as possible should be dissected loose as a flap, having for attachment its continuation into the bladder. Then the cavernous bodies are separated by a blunt dissection or by light touches with the knife. In the normal penis this would be impossible without injuring the fibroid envelope covering them. A short vertical incision is made in the glans penis.

Doctor Parham, of New Orleans, suggests that the urethra be cut off at its junction with the glans. Then tunnel the glans with a knife or trocar, and draw the urethra through the opening thus made. This is a most valuable suggestion in the most difficult part of the operation, and the well-known extensibility of the urethra would make it easier and I believe better.

The urethral flap is placed in the gutter between the cavernous bodies and held in this position by two sutures through mucous membrane and skin tied on the under surface of the penis; a metal catheter is then laid on the urethra and a tunnel is formed by a continuous suture of the free edges of mucous membrane above the instrument. The corpora cavernosa are brought together above this and retained in place by continuous suture. The skin being brought together above these, a few well-applied deep sutures are taken in the skin and fat of the mons veneris. This leaves a perfect penis, with only a line of sutures along the dorsum.

There is usually free bleeding, but this is readily controlled by sutures and pressure. In my own cases I allowed the catheter to remain in during the process of healing. I now believe it causes swelling, and the bladder can be washed, if necessary, through the perineal tube.

I. D. L.

LARYNGOLOGY.

By WILLIS SIDNEY ANDERSON, M. D., DETROIT, MICHIGAN.
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GLIOMA OF THE NOSE: REPORT OF TWO CONGENITAL CASES.

J. PAYSON CLARK (*American Journal of the Medical Sciences,* May, 1905) states that some writers deny the occurrence of true glioma outside of the brain or spinal cord. No one denies the extreme rarity of this growth outside of the central nervous system. Two cases are reported: the first, in a child two years of age who had a rounded tumor of the nose about the size of a robin's egg. It resembled very strongly, in appearance and consistency, a fatty tumor. The second case was in a ten weeks' old child who had a pinkish-gray polypoid mass in the left vestibule. The diagnosis in each case was made by histologic examination. These cases were both evidently of prenatal origin. Clark believes that the growths arose during the process of fetal development, through the shutting out of some neuroglia tissue.

EDITORIAL COMMENT.

THE AMERICAN MEDICAL ASSOCIATION.

THE fifty-sixth annual meeting of this organization recently achieved seccessful termination in Portland. The attendance was large, but as usual much of the representation was drawn from contiguous territory. Authentic reports pronounce the scientific rendering in the medical and surgical sections on a par with the average work of the annual gatherings. The address of President-elect McMurtry contemplated "The American Medical Association—Its Origin, Progress, and Purpose." This medical body was organized in 1846, when there were only about twenty-five thousand physicians in the United States. The convention for the purpose represented affiliated societies, colleges, and hospitals throughout the states. Founded in accordance with the dictum of this constituency meetings were conducted for many years by delegates from state, district, county and such other medical societies as adopted the code of ethics of the national association. The rapid increase in population, the admission of new states into the Union, and the settlement of new territories were incidents that gave rise to a vast increase of physicians, with corresponding multiplication of state and county societies. Under the apportionment of delegates then in vogue the association developed into a body too unwieldy for the rapid transaction of business, as practically every member in attendance at the annual meeting was a delegate during the later years of the original régimé. While the scientific work was conducted with increasing excellence, legislative matters were greatly neglected. Thorough discussion of important questions and judicious disposition thereof became practically impossible. In addition to these drawbacks the personnel of the delegates was annually changing, together with the sources of attendance according to the sections of country in which the meetings were convened. This condition militated against equal representation of all sections and the continuation of work from year to year along definite lines. Consequently in 1900 a Committee on Reorganization was appointed, and one year later its report was submitted and adopted at the Saint Paul meeting. The report contemplated a new constitution, which changed the basis of apportionment for delegates, by reducing the delegate body—in which the membership of the state societies is proportionately represented—to one hundred fifty, and established a close relationship between the national organization and the state, district and county societies, thereby affording a practical scheme of complete organization of the medical profession of the United States, the county society being the unit. All the states and territories, with the exception of three, and including Hawaii and Porto Rico, are now organized on a practically uniform plan, with universal local societies and coincident membership therein and a state association as the cardinal feature. The American Medical Association is now the largest medical organization in the world. It enjoys ownership of valuable property, has accumulated a fund of considerable magnitude, and is the recipient of commensurate income. The possibilities for future organization are incalculable, but the field affords much available material.

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The legislative branch was convened under the presidency of Doctor John H. Musser. In a brief address of welcome the doctor reminded the delegates of the responsibility which the Association reposed in the assembly, and eulogized the permanent officers for the very efficient service which they had rendered. The Secretary reported that four thousand eight hundred eighty-nine new members had been admitted during the past year, and that nine hundred thirty-eight had died or resigned, leaving a net gain of three thousand nine hundred fifty-one. The reports of various committees comprised much of the early proceedings. The Committee on Legislation rendered a report which considered the status of the profession in relation to the public service; the duties to the public of physicians in private life; the necessity of greater independence of the Panama Canal Zone sanitary authorities; the pure food and the pure drug question; the whiskey trust; the patent medicine trust; the improvement of the naval hospitals; the betterment of the Public Health and Marine Hospital Service; the practice of allowing certain alleged medical circulars the privilege of the mails; the scarcity of medical men in State and National Legislatures; and suggested that a bureau of medical legislation be established and permanently located in the Association building at Chicago, which suggestion was adopted. The Committee on, Research embodied in its report the recommendation of a permanent grant of one hundred dollars each to the three persons making important scientific researches, which recommendation was adopted. The Council on Education reported unfavorably to requiring a complete college course in arts by those intending to pursue the study of medicine, as the time devoted to literary study added to that devoted to purely medical study and to hospital experience would occasion unnecessary and unwise delay in entering the field of practice; the recommendation was therefore made that after 1908 five years be required in a medical school and one year in a hospital. The Committee on the Rush Monument reported that the memorial had been erected and the expense incident thereto liquidated. The Committee on the Reed Memorial reported progress and was granted continuance. The Committee on National Incorporation reported that nothing whatever had been accomplished. A preamble and resolution which had been adopted by the Michigan State Medical Society, and presented by Doctor Eugene Smith, of Detroit, strongly objected to the publication by the Association of a medical directory containing the names of irregular physicians. The committee having the matter in charge reported in favor of an annual directory of all licensed practitioners in the United States, the names of members of the Association to be indicated by special type. The question of the character of advertising admissible to the pages of the national journal elicited considerable discussion, and the Secretary was finally ordered to obey the resolution adopted in 1895, which requires that the composition and dosage of all proprietary remedies be published with the advertisement. It was stated with regret that the effort to procure new subscribers to the national journal by canvassing the subordinate state and county societies practically resulted in complete failure. The work of establishing subordinate societies was approved, and although many difficulties had been encountered by the organizer the measure of success achieved warranted the adoption of a resolution to continue this method of augmenting the fold.

ANNOTATIONS.

A NEW BACKGROUND STAIN FOR THE TUBERCLE BACILLUS.

Wile has perfected a new method of staining the tubercle bacillus. The smear is prepared in the usual manner and stained in carbolic fuchsin, after which the cover-glass is drained of an excess of the stain, washed in distilled water, and then plunged repeatedly into Labarraque's solution until the slide assumes a uniformly brown color. Distilled water is again employed to free the preparation of an excess of hypochlorite solution, and the specimen is examined under a one-twelfth oil immersion lens. The organisms are seen as red rods on a brown background.

MARIE DONATI ON INGUINAL HERNIA IN THE MALE.

In discussing the prevalence of inguinal hernia, Marie Donati, in a foreign publication, states that the frequency of the condition in the male is due to a different formation of the inguinal canal. In arriving at this conclusion the doctor dissected fifty-two cadavers, thirty-one women and twenty-one men, and invariably observed marked dissimilarity in the anatomical construction of this region in the two sexes. The line of insertion of the external oblique muscle has linear interstices, which are much larger in the male than in the female, and the internal oblique muscle is much stronger near the canal in the female. The arciform fibers are mingled with cross fibers in the female, and these tend to strengthen the ring, the orifice of which is usually smaller in females than in males. Moreover, the aponeurosis of the large oblique muscle, forming the anterior wall of the canal, is much stronger in the female. Thus, according to Donati, tangible reasons are offered to account for the tissue at this point being more resistant in the female than in the male.

A PRACTICAL STUDY OF FEMALE PELVES.

COMPARATIVE studies of fifteen hundred white and colored pregnant women regarding deformities of the pelvis, et cetera, led Doctor T. C. Riggs to record, in a German contemporary, the discovery that the white woman more closely reaches perfection in pelvic development than does the negress. The pelvis of the white woman was found low and broad, in contradistinction to the narrow, deep pelvis of the colored woman. Contracted pelves were vastly more common in the negress, and in the greater number of cases the white child was larger and better developed at birth than was his dark-skinned brother. The doctor is of the opinion that occupation and living conditions, to a great extent, influence the size of the child.

THE PREVALENCE OF PLAGUE IN THE INDIAN PENINSULA.

THE Society of Arts of London has received a report from Doctor Charles Creighton describing the results of his researches in regard to the vast prevalence of bubonic plague in India. The doctor being dissatisfied with the report of the British Plague Commission of 1898, made a special journey to Asia and conducted personal investigations, which throw much light on the hygienic conditions prevailing in the Indian peninsula. The studies were made with special reference to the occurrence of the disease in two districts—Ratnagiri and Satara. In the former district the buildings, roadways, et cetera, are constructed almost entirely of stone, and plague enjoys very little prevalence in the vicinity. In the latter district, however, the dwellings are built of mud and living conditions are far from ideal, the houses being filthy and greatly overcrowded. It is needless to say that the malady occurs in this district with the greatest frequency. The conclusions of the investigator are that inefficient drainage and the crowded and unhygienic condition of the houses are primary factors in the causation of the disease.

MALARIAL FEVER AND MOSQUITOES.

DOCTOR J. TALMAGE WYCKOFF, in considering the methods of malarial fever infection before the Medical Society of New Jersey, ventured the opinion that there might be other means of human infection than those now known to the medical profession. Referring to the epidemics of the disease which usually follow the evacuation of sewers or the construction of railroads through uninhabited districts, the doctor suggested the possibility of soil impregnation with the unusually resistant black spores of Ross or the deposition of sporozoites by mosquitoes, adding that the upturning of the earth incident to building operations eventually releases them and gives rise to subsequent sickness. The doctor mentioned regions in Africa and India, in which malaria is so prevalent that man cannot live within their limits, and said that if the mosquito can obtain the parasite only from man, and if malaria is necessary for the continued life of the parasite, then the fever could not exist in these regions. He therefore advanced the three suppositions that it is possible for the parasite to exist in several species of vertebrates; or that the parasite might be kept alive by passing from mosquito to mosquito without animal assistance; and lastly that the parasite might be obtained by the mosquito from certain varieties of ameba, which exist in the algæ upon which the larvæ feed.

SURGEON VON MIKULICZ-RADECKI.

The medical profession has reason to mourn the death of Johannes von Mikulicz-Radecki, professor of surgery in the University of Breslau. Early in his career, while yet assistant to Billroth, his investigations enlisted marked attention. Not only has the domain of orthopedic surgery been illumined by his studies regarding the cause of genu varum and genu valgum, but knowledge in other fields has been gained through his operative procedures on the stomach, intestines, peritoneum, et cetera, his proposal to inject nucleic acid into the latter organ for the purpose of increasing its resisting power by producing artificial hyperleucocytosis, serving to indicate the originality and initiative of the man.

CONTEMPORARY.

CONCERNING MEDICAL HISTORIES.

[INTERSTATE MEDICAL JOURNAL.]

It is a subject for regret that English and American physicians have not produced works on the history of medicine commensurate to their contributions to practical medicine and surgery. In this respect we, and our English cousins, are behind the French and the Germans. The French have been busy writing biographic dictionaries of medical men, and composing monographs dealing with particular periods in the history of medicine. The "Dictionnaire Historique de la Medicine Ancienne et Moderne," of Dezeimeris (Paris, 1828–1837) is well worthy of mention. Another valuable work is the "Biographie Medicale par ordre Chronologique," by Bayle et Thillaye, Paris, 1855. Malgaigne, in his "Œuvres Completes d' Ambroise Pare," Paris, 1840, has given a great deal of information concerning the state of surgery in the fifteenth, sixteenth and seventeenth centuries. A noted writer, whose philosophic work was early translated into English, was Renouard ("History of Medicine from its Origin to the Nineteenth Century," Cincinnati, 1856). A large number of monographs written by eminent French medical historians could be mentioned, but space forbids.

Among the German medical histories we may mention the works of Lessing, "Handbook der Geschichte der Medizin," Berlin, 1838; Friedlaender, "Vorlesungen ueber Geschichte der Heilkunde," Leipzig, 1839; Isensee, "Die Geschichte der Medicin und ihrer Huelfwissenschaften," Berlin, 1840; Hirschel, "Compendium der Geschichte der Medicin," Wien, 1862, and Baas, whose work has been translated into English, "Outlines of the History of Medicine and the Medical Profession," New York, 1889. Puschmann's "History of Medical Education," London, 1891, is a translation of a valuable work by a noted Vienna professor. However, it happens often that the German history is noted more for ponderosity than for essential merit. In thoroughness, in readability and in logicalness, not one of the works mentioned above can compare with Kurt Sprengel's "Versuch einer Pragmatischen Geschichte der Arzneikunde," Halle, 1792–1803. The five volumes of Sprengel's masterpiece form a veritable mine from which later writers have taken many valuable treasures, which have been dealt out to the medical profession, sometimes in their original form, sometimes slightly modified.

When now we turn to English and to American works on medical history we are forced into an apologetic attitude. Not that we would decry the value of special articles and monographs, such as have been written by Greenhill, Watson, Dalton, Gross, Pilcher and George Jackson Fisher, but because there exists no monumental history of medicine written originally in the English language. Freind's "History of Physick," London, 1750, takes up the subject from the time of Galen and brings it to the beginning of the sixteenth century. It concerns chiefly the medical practice of the middle ages. Northcote's "Concise History of Anatomy," London, 1772, contains much valuable information presented in a jumble of Latin and English. Walker's "Memoirs of Medicine," London, 1799, treats in a scholarly manner of medicine among the Greeks, Romans and Arabs, of the discovery of the circulation of the blood, and of the state of medicine in the eighteenth century. Hamilton's "History of Medicine, Surgery and Anatomy," London, 1831, purports to cover the subjects "from the creation of the world to the commencement of the nineteenth century." It consists of two small volumes of 419 and 306 pages respectively. In the same year appeared Moir's "Outlines of the Ancient History of Medicine," London, 1831, in a duodecimo volume of 278 pages. The sizes of the volume are mentioned simply to show how some very able writers have attempted to cover vast subjects in a small compass.

Meryon's work, "History of Medicine," London, 1861, was so severely criticised that the second volume never appeared. In recent years two valuable English works have appeared by Berdoe, "The Origin and Growth of the Healing Art," London, 1893, a popular history of medicine, and Withington, "Medical History from the Earliest Times," London, 1894. Among works of lesser magnitude but of conspicuous merit we may mention South's "Memorials of the Craft of without injuring the cavernous bodies. The whole penile urethra Surgery in England," London, 1886; Caton's "Temples and Ritual of Asklepios," 1899; Foster's "Lectures on the History of Physiology," Cambridge, 1899; and Payne's "English Medicine in the Anglo-Saxon Times," Oxford, 1904.

In this country, although no complete history has been written—the works of Dunglinson and Park being merely epitomes—considerable creditable work has been done. Thacher's "American Medical Biography," Boston, 1828, contains a delightful chapter in the history of medicine in America. Thacher's work was continued by Williams, "American Medical Biography," Greenfield, Massachusetts, 1845. Both of these works contain portraits, as also did Atkinson's "Physicians and Surgeons of the United States," Philadelphia, 1878. A book which is not generally known, but one which reflects great credit upon the scolarship of its author, is Fort's "Medical Economy During the Middle Ages," New York, 1883. Written by a lawyer, it is a valuable contribution to the history of European morals from the time of the Roman empire to the fourteenth century.

Recently Packard, "The History of Medicine in the United States," Philadelphia, 1901, and Mumford, "A Narrative of Medicine in America," Philadelphia, 1903, have placed the profession under great obligations. Wright's "Nose and Throat in Medical History," Saint Louis, no date, shows how interestingly one of the special departments of medical history can be presented.

MEDICAL NEWS.

THE PETOSKEY GATHERING OF PHYSICIANS.

THE fortieth annual meeting of the Michigan State Medical Society was held at this well-known resort on June 28, 29, and 30, 1905. The address of President Harison considered "The Present Status of the Medical Profession in Michigan." Prior to 1883 medical "free trade" obtained in Michigan, the title of physician being common property. During the following sixteen years, an inefficient medical registration law "legalized free trade" in medical practice. At this juncture the Chandler Medical Act became vogue, and from 1899 to 1903, the State Board of Medical Examiners disqualified sixteen hundred incompetent practicians. The Nottingham Act, which became operative in 1903, affords the highest standard of requirement for admission to medical practice in this country, and has already been copied in other states. It was recommended that the society make Detroit its permanent meeting place; that the Society cooperate with the State Historical Society for the purpose of securing data regarding pioneer physicians; and that the Society appoint a committee to institute measures for combating the patent medicine evil.

The following officers were elected: President, Doctor David Inglis, of Detroit; vicepresidents, Doctors Arthur M. Hume, of Owosso, Alfred W. Hornbogen, of Marquette, Florence Huson, of Detroit, and Neil S. McDonald, of Hancock; councilors, Doctors Mortimer Willson, of Port Huron, Charles H. Baker, of Bay City, Alvin H. Rockwell, of Kalamazoo, and Ralph H. Spencer, of Grand Rapids. Section officers.—Medicine: Chairman, Doctor Herman Ostrander, of Kalamazoo; secretary, Doctor Russell S. Rowland, of Detroit; orator, Doctor Bartlett H. McMullen, of Cadillac. Surgery: Chairman, Doctor Edwin C. Taylor, of Jackson; secretary, Doctor Francis J. Lee, of Grand Rapids; orator, Doctor Augustus W. Crane, of Kalamazoo. Obstetrics and Gynecology: Chairman, Doctor Florence Huson, of Detroit; secretary, Doctor Benjamin R. Schenck, of Detroit; orator, Doctor Edward T. Abrams, of Dollar Bay. A goodly number of excellent papers were read and considerable discussion was evoked thereby. The next meeting will be held in Jackson.

THE NATIONAL MEDICAL ELECTION.

The next meeting of the American Medical Association will be held in Boston. The following officers were elected at Portland to further the interests of the organization in the meantime: President, Doctor William J. Mayo, of Minnesota; vicepresidents, Doctors Walter Wyman, Surgeon-General of the United States Public Health and Marine Hospital Service, Kenneth A. J. Mackenzie, of Oregon, Eugene S. Talbot, of Illinois, and E. D. Martin, of Pennsylvania; secretary, Doctor George H. Simmons, of Illinois; treasurer, Doctor Frank Billings, of Illinois; trustees, Doctors Edward E. Montgomery, of Pennsylvania, Arthur L. Wright, of Iowa, and Henry L. E. Johnson, of the District of Columbia; members of council, Doctors P. Maxwell Foshay (reappointed), and William S. Foster, of Pennsylvania, vice Doctor Wiggin, resigned; orator in medicine, Doctor Frederick C. Shattuck, of Massachusetts; orator in surgery, Doctor Joseph D. Bryant, of New York; orator in state medicine, Doctor William H. Sanders, of Alabama.

MINOR INTELLIGENCE.

Doctors Howard B. Baker and Edmund Quandt were recently elected city physicians of Detroit.

At the recent election of officers of the Detroit College of Medicine, Doctor Theodore A. McGraw was chosen president and Doctor H. O. Walker secretary.

WISCONSIN'S anticigarette law went into effect on July 1, and it is stated that neither cigarettes nor cigarette papers can be procured in the city of Milwaukee.

THE Board of Estimates of New York City has granted an appropriation of $17,000 to Health Commissioner Darlington, with which to conduct a crusade against mosquitoes.

EFFORTS are being exerted to raise $100,000 for the purpose of establishing a hospital at Ponce, Porto Rico. The project is being promoted by the Episcopal denomination.

PEDIATRICS is a new department which has recently been created by the Board of Regents for the medical department of the University of Michigan. Doctor David Murray Cowie will have charge of the specialty.

DOCTOR THOMAS B. COOLEY has resigned the directorship of the Pasteur Institute at the University of Michigan, and Doctor James G. Cumming, his former assistant, has been appointed by the Board of Regents to succeed him.

DOCTOR THEODORE A. MCGRAW, A. B., University of Michigan, 1859, President of the Detroit College of Medicine, and professor and eminent practitioner of surgery, lately received the honorary degree of LL. D. from his alma mater.

THE Fifth International Congress of Psychology convened recently at Rome under the general presidency of Professor Sergi. The meeting consisted of four sections which were conducted by Tano, Ardigo, Morselli, and Lombroso, and which were largely attended.

THE seventy-seventh annual meeting of the German Association of Naturalists and Physicians will be held at Meran, September 24 to 30, 1905. The scientific branch of the Congress will be divided into fourteen sections, while the medical branch will cover seventeen sections.

THE annual commencement exercises of Rush Medical College were held on June 16, at Mandel Hall, University of Chicago, when seventy-one candidates received the degree of Doctor of Medicine. The commencement oration was delivered by Doctor Ira Remsen, of Johns Hopkins University.

THE degree of Doctor of Medicine was conferred on two hundred thirteen students at the graduating exercises of the Chicago College of Physicians and Surgeons, the medical department of the University of Illinois, on June 6. Thirteen women were members of the class and of these four were enrolled on the honor list.

DOCTOR FRANK BANGHART WALKER, associate collaborator in the department of Surgery of this journal, was married to Kate Huntington Jacobs on Monday afternoon, June 26, 1905, at Saint Paul's Church, Detroit. The happy pair, after enjoying an extended wedding trip, will be at home October 19 and 26, 274 Putnam avenue.

PLANS have been filed with the building department of New York City for a five-story fire-proof dispensary, which will cost in the neighborhood of $175,000. The institution, which is to be operated in connection with the German Hospital, will be dedicated to the memory of Mrs. Anna Ottendorfer, and will be known as the Ottendorfer Dispensary.

DOCTOR CHARLES WOOD FASSETT, managing editor of *The Medical Herald*, of Saint Joseph, Missouri, has been appointed to the Chair of the History of Medicine in the Ensworth-Central Medical College of that city. This institution is the product of the recent consolidation of Ensworth and Central Medical Colleges. Its professorial equipment will consist of thirty-one teachers.

THE first meeting of the German Laryngological Association was held at Heidelberg on June 13, 1905, the opening address being delivered by B. Fraenkel, of Berlin, on "The Future of Laryngology." The society was organized last August at the instance of Moritz Schmidt, with the idea of uniting all the laryngologists of Germany, Switzerland, and Austria into an international organization.

THE annual gathering of the Ohio State Medical Society was held recently at Columbus. The following officers were elected: President, Doctor Thomas C. Martin, of Cleveland; first vicepresident, Doctor B. H. Lean, of Lebanon; second vicepresident, Doctor W. B. Hedges, of Delaware; third vicepresident, Doctor O. A. Dickson, of Jefferson; fourth vicepresident, Doctor D. R. Silver, of Sidney.

THE Chicago Medical Society has commenced injunction proceedings to restrain the park commissioners from interfering with the erection of a memorial to Samuel Guthrie, in Grant Park. The medical society officials contend that inasmuch as the city council, at the instance of the park board, passed an ordinance permitting the erection of a monument, the commissioners are not justified in opposing their plans.

NEW YORK is having considerable difficulty in securing a site for the proposed tuberculosis sanatorium, the officials of several of the smaller towns in the vicinity seeming not to desire such an institution within their boundaries. Health Commissioner Darlington announces, however, that he has secured options on two locations near the Hudson River, forty miles from the city, and one of these will probably be purchased.

THE American Association of Pathologists and Bacteriologists, which recently convened in Chicago, conducted a very successful meeting. Various papers were presented detailing the researches which have been instituted in these subjects, among them being a very instructive contribution by Doctors Dock, Warthin, and Cowie, of the University of Michigan, regarding the destructive effects of the x-rays on the glands and blood cells in leukemia.

PRESENT indications regarding bubonic plague are to the effect that the malady has been exterminated from the isthmus. But one case developed at La Boca, the only place at which the disease appeared, and as the incubation period has passed, with no new cases reported, it is likely that the sanitary measures adopted by the officials proved abortive. The infected village has been thoroughly cleaned and fumigated, but is yet entirely isolated.

THE annual meeting of the American Association of Genitourinary Surgeons was held recently in Montreal. The following officers were elected for the ensuing year: President, Doctor F. Tilden Brown, of New York; vicepresident, Doctor William K. Otis, of New York; secretary, Doctor John Van der Poel, of New York; member of council, Doctor Hugh H. Young, of Baltimore. The next meeting of the association will be held in New York City.

THE seventy-sixth commencement exercises of McGill University Medical School were held in the assembly hall of Royal Victoria College, on June 10, seventy-three students receiving degrees. The year has been noteworthy to the faculty of medicine by reason of the fact that an amalgamation has been effected between McGill and Bishop's College and because the school of medicine has been brought into closer touch with the other departments of the university.

MARY KLINKER, a nurse of New York City, is suing the estate of Frederick Akers, a wealthy soap manufacturer, to recover $30,000, partly for professional attendance and partly because deceased promised to remember her in his will to that amount on account of services rendered. Mrs. Klinker testified regarding her daily duties, which were quite arduous, but the Supreme Court was unable to determine the value of said services and the case will be tried again.

THE Northern Tri-State Medical Society—Michigan, Ohio and Indiana—held its semiannual meeting in Fort Wayne on June 15. Members were present from the three states and participated in a profitable meeting. The following officers were elected: President, Doctor William J. Gillette, Toledo; vice-president, Doctor Theodore F. Wood, Angola, Indiana; secretary, Doctor William F. Schumaker, Butler, Indiana; treasurer, Doctor Arthur G. Holbrook, Coldwater, Michigan. The next meeting will be held at Detroit in January, 1906.

YETTA GREEN, a seven-year-old New York girl, died recently from the effects of an injection of antidiphtheria serum. A sister had been given 5,000 units and another sister 1,000 units of the antitoxin as a prophylactic measure, and it seemed incredible that death should result in the former case. That the serum was not responsible for the fatal result was demonstrated at autopsy, when Yetta was found to possess a congenital heart malformation, which indicated that death was probably due to fear and excitement induced by the procedure of injection.

THE Louisiana Purchase Exposition has awarded a gold medal to Doctor S. A. Knopf, of New York City, in appreciation of his research work on tuberculosis. The exhibit consisted of his text-book on "Pulmonary Tuberculosis: Its Modern Prophylaxis and Treatment in Special Institutions and at Home," which is published in three languages, English, French and German; his international prize essay, "Tuberculosis as a Disease of the Masses, and How to Combat It"; and various other lectures and addresses pertaining to the subject.

ABOUT twenty-five professional friends of Doctor Thomas Addis Emmet assembled at his residence in New York City, on the evening of June 20, and presented him with a loving cup, in appreciation of his services to the medical fraternity. The event was an appendix to the banquet tendered the doctor on the occasion of his seventy-seventh birthday, May 29. The presentation speech was made by Doctor Henry C. Coe, who paid a glowing tribute to the character of Doctor Emmet and to his successful development of much that is best in American gynecology.

THE twenty-fifth annual meeting of the French Society for the Promotion of Cremation was held recently at Paris, under the presidency of Doctor Bourneville. Reports rendered at the meeting show that there are ninety crematories in operation in Europe and America, and that thus far approximately one hundred twenty-five thousand bodies have been cremated. Notwithstanding the efforts of the society the practice does not seem to gain popularity in France, and education along sanitary lines by means of lectures and the distribution of leaflets is being attempted.

THE Michigan State Dental Association has just completed a very successful meeting in Detroit. A number of excellent papers contributed to the edification of the gathering, one on "The Value of Occlusion in Crown and Bridge Work" being presented by Doctor Robert Brown Howell, of the dental faculty of the University of Michigan. The following officers were elected for the ensuing year: President, Doctor J. J. Green, of Ionia; vicepresident, Doctor Alfred Le Gro, of Three Rivers; secretary, Doctor E. B. Spalding, of Detroit; trustee, Doctor C. H. Worboys, of Albion.

THE board of trustees of the Michigan Asylum for the Insane have received applications from the following physicians for the position of Superintendency of the institution, for fourteen years occupied by Doctor William M. Edwards, lately deceased: Doctor Henry P. Frost, of the State Hospital for the Insane at Buffalo, New York; Doctor William Rush Dutton, of Baltimore; and Doctor William H. Stone, present acting superintendent of the asylum. Doctor Herman Ostrander, who has been a member of the medical staff for a number of years, is a candidate for assistant superintendent. It is not yet known when the selections will be made.

Doctor Eugene Smith, of Detroit, has designed a capsule forceps for employment in operations on the eye. The advantage possessed by this instrument is the curving or dropping of that portion of the ends of the blade which contains the teeth, below the plane of the blades, that the teeth may set down into the pupillary space without tilting the forceps, which are introduced closed, as for iridectomy. The curve at the point where the teeth are dropped is one millimeter in depth; the part containing the teeth is two millimeters long, the blades open automatically five millimeters, and when closed are one and one-half millimeters apart, excepting that portion containing the teeth.

The authorities at Saint Petersburg are fearful lest, together with the other calamities which have befallen the empire, an epidemic of cholera should appear. At Sosnovice, Poland, deaths are occurring daily from the disease, and three suspected cases are reported from Tula. The officials of both of these places have ordered anticholera inoculations, as the warm weather which prevails in that region is favorable to the spread of the disease. The medical superintendent at Harbin has reported the cholera situation very grave. There are confined in the hospitals of that vicinity twenty-six thousand wounded soldiers, and stringent preventive measures are being adopted.

RECENT LITERATURE.

REVIEWS.

PROGRESSIVE MEDICINE.*

"Progressive Medicine" for June has reached our table. After examining the book very carefully we find ourselves compelled to regard it as we have preceding volumes of this series—thoroughly trustworthy and to date in every particular. This issue considers the important subjects of hernia, surgery of the abdomen—exclusive of hernia,—gynecology, ophthalmology, diseases of the blood, spleen, thyroid, lymphatic system, and metabolism, by such men as Coley, Foote, Clark, Stengel, and Jackson, investigators who are thoroughly capable of separating the grain from the chaff, a process which they have evidently applied in the selection of material for the present volume. The field covered by the work is so extensive that it would be impossible to review each subject in the space at our disposal; suffice it to say that we are still of the opinion that for a work of this character and scope "Progressive Medicine" is in the front rank.

*A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare,

M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 346 pages, 48 illustrations. Per annum, in four cloth-bound volumes, $9.00; in paper binding, $6.00; carriage paid to any address. Lea Brothers & Company, Publishers, Philadelphia and New York.

DISEASES OF THE NOSE AND THROAT.*

This very useful book, the result of many years of clinical experience, has formed the basis of a course of lectures at the Cornell University Medical College. As a text-book it is of a size suitable for medical school work, being neither so long as to appear padded nor yet so short as to render necessary the elimination of valuable material. It is well adapted also to the use of the specialist and general practitioner. The subject-matter is presented in a clear and concise manner which makes it enjoyable as well as instructive reading.

*By Charles Huntoon Knight, A. M., M. D., Professor of Laryngology in Cornell University Medical College. Published by P. Blakiston's Son & Company.

IMMUNE SERA: HEMOLYSINS, CYTOTOXINS, AND PRECIPITINS.*

The translation of Professor Wassermann's convenient little book has been a boon to many medical students and practitioners who have been unable to wade through the great mass of literature that has sprung up relating to serum diagnosis and therapy. The clear and concise statement of Ehrlich's theory, of the views regarding Hemolysis, Immunity, Cytotoxins, et cetera, make the little volume almost indispensable to the medical student.

*By Professor A. Wassermann, M. D., University of Berlin. Authorized translation by Charles Boulduan, M. D. 12mo, ix + 76 pages. Cloth, $1.00. John Wiley & Sons, 43-45 East Nineteenth street, New York. London: Chapman & Hall, limited.

STUDIES IN GENERAL PHYSIOLOGY.*

This well-published work presents in a convenient form the collection of valuable papers by Doctor Loeb. Though some of these have been made the basis for sensational newspaper articles, the scientific interest of the questions touched upon will appeal to all interested in the great problems of biology, and to all these the present work will be of great value. To educated laymen as well the collection of researches will prove most interesting and instructive.

*By Jacques Loeb. The Decennial Publications of the University of Chicago. Parts I and II. 782 pages, $7.50, net. The University of Chicago Press.

THE MODERN MASTOID OPERATION.*

THIS exhaustive work is the most complete monograph on the subject yet published. It is divided into two portions, an Historical and a Technical one.

The Historical Portion of three chapters deals with the "Development of Mastoid Surgery," with a consideration of the Schwartze operation, and finally with the description of the "Complete Mastiod Operation" as performed by the author.

The complete operation differs from the ordinary mastoid operation in two important points. *First:* In the integumentary incisions. The author advocates two incisions, namely, a primary incision extending from a point one-half inch below and a little in front of the centre of the mastoid tip, thence upwards parallel to the postauricular fold to a point one-half inch above the attachment of the pinna. The second incision extends one inch directly backwards toward the occipital protuberance, beginning upon the posterior margin of the primary incision at a point opposite the centre of the external auditory canal. *Second:* The removal of the pneumatic and diploetic cells in the posterior root of the zygoma. These two points the author considers of the utmost importance, and records a series of two hundred fifty consecutive cases with but one reoperation, and that in a phthisical patient.

The Technical Portion is devoted to the "Pathology of Suppurative Mastoiditis and to the Descriptoin in Detail of the Complete Operation." The operation is divided into its several steps to each of which a chapter is given and each of which is most minutely described. No detail is so insignificant as to escape careful attention. Each chapter closes with a brief résumé of the "Faults of Technique" committed by careless or inexperienced operators.

The volume is handsomely illustrated by half-tones which show clearly each step in the operation and which make the work a splendid atlas of mastoid surgery.

*By Frederick Whiting, M. D., Professor of Otology in Cornell University Medical College. Illustrated by 25 half-tone and 23 key plates made from original drawings. Half leather. Pages 353. Price $6.00. Philadelphia: P. Blakiston's Son & Company, 1905.

AN INTRODUCTION TO VERTEBRATE EMBRYOLOGY.*

THIS volume is intended as an outline from which the student in embryology may obtain the main facts about the development of the frog and chick. The needs of the medical student have been especially considered in the preparation of the work. As a convenient and concise text-book the work admirably fulfills the purposes for which it is intended, and it may be recommended to students and teachers.

*By Albert Moore Reese, Ph. D. 291 pages, 84 illustrations. G. P. Putnam's Sons, New York, 1904.

The Physician and Surgeon

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ORIGINAL ARTICLES.

MEMOIRS.

THE VALUE OF STATISTICS IN THE STUDY OF CANCERS.*

By THEODORE A. McGRAW, A.B., M.D., LL.D., DETROIT, MICHIGAN.
PROFESSOR OF SURGERY AND CLINICAL SURGERY IN THE DETROIT COLLEGE OF MEDICINE.

THE medical profession is hampered in its investigation of cancers and tumors by the absence of trustworthy statistics. In fact, it is only very recently that medical men have become sufficiently interested in studying the problems connected with malignant diseases from a statistical standpoint to investigate even such records of these maladies as may be found in the health offices of the more civilized communities. When finally the profession became aroused to the necessity of securing more accurate knowledge of the prevalence of cancer in various countries and races and in different times, it was found that the records had been kept too meagerly and often too carelessly to furnish data for comparisons. We may safely affirm that there exist no records of cancer of scientific value before the year 1870, and even now the methods of obtaining the data required for this study, though much more efficient than those of thirty years ago, are not such as to inspire perfect confidence in the results. One reason of this is that the collection of trustworthy data has very great inherent difficulties. They are obtained, such as they are, from the files of death certificates in the health offices and life insurance companies. These certificates are signed, usually, by physicians practicing in the place whence they come, but occasionally, when death has occurred without proper medical attendance, by some authorized government official.

Their correctness depends upon the competency and mental attitude of the physicians who furnish them to the government boards. It is evident that whenever any great percentage of the medical men in any community are, from education or inexperience, incompetent to make correct diagnoses, or are careless and indifferent, the data will be so imperfect as to render their study absolutely useless for any practical purpose.

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*Read before the MICHIGAN STATE MEDICAL SOCIETY, at the Petoskey meeting, June 28, 1905.

The character of the statistics of any period will be determined, therefore, by the standard of medical efficiency maintained in that period. The number of errors in the records of any community will vary in exact proportion to the relative number in it of incompetent physicians. For statistical purposes, it is not sufficient for the attainment of approximate correctness that the upper stratum of the profession should be highly competent; it is also necessary that the number of inefficient and ignorant practitioners should be very limited. The bare statement of this truism will indicate to any one conversant with the condition of the profession in America the value to be placed upon American medical statistics. I do not remember the exact date when a state of the American Union first passed a law regulating the practice of medicine and recognizing a degree of education that would render the physician moderately proficient in diagnosis. But it is safe to assert that fifteen or twenty years ago there was not a state in which there were not great numbers of men practicing medicine who had never had any medical education whatever. Even now, when more rigid laws prevent, in many states, the entrance into the profession of unqualified men, we have to regret that such laws could be passed only on the condition that the unqualified men already in practice should not be disturbed. Such men are to be found today in every neighborhood. If we examine further into the matter, however, and ask as to the competency of many men who hold diplomas from legally authorized institutions, we become aware of a condition of the profession in the United States which must cause despair to a conscientious statistician. We may, indeed, congratulate ourselves that the rapid improvement in the efficiency of our medical schools and the greater stringency of our laws regarding practice are already showing their beneficial effects in the character of our younger medical men, but as regards statistical inquiry, we may not forget that we shall suffer for years for our sins of the past. To what extent the statistics of other lands are rendered untrustworthy by reason of a low grade of medical education and intelligence I do not know. It is, however, a curious fact that a large percentage of deaths occur in certain parts of Germany without the attendance of qualified physicians. Thus, in Weinberg and Gaspar's article on the "Bosartige Neuhildungen in Stuttgart," it is stated that in 1879, thirty per cent of the deaths of men and twenty-seven per cent of those of women had taken place without competent medical attendance, and that in 1901 this percentage had diminished to sixteen per cent of men and fifteen per cent of women. In Wurtemburg, in 1899, thirty-eight per cent of all deaths had occurred without the attendance of qualified practitioners. They are careful to state that they did not reckon, under the head of medical attendance, the attendance of so-called "Wund Aerzte." Just what are the qualifications of the "Wund Aerzte," who seem to be privileged to practice, does not appear.

Besides the actual incompetence of many practitioners, there are other causes which serve to vitiate the data on which rest all medical statistics. Thus, in very large cities, such as London and New York, the examinations of the very poor who die in their own homes are often of the most imperfect character.

Practitioners who attend to them are overwhelmed by their great numbers and deterred from careful investigations by filthy conditions. Many of the poorer foreigners are members of large societies which employ physicians at almost nominal rates and work them to the utmost limit. It is not surprising that under such conditions diagnoses should be guessed at and therapeutics become a farce.

If the conditions which influence the character of the death certificates were the same in all decades, it might be possible, notwithstanding serious defects in the fundamental data, to draw useful comparisons. If, however, the conditions are widely dissimilar, if the grade of average medical attendance differs in marked degree, and if the liability to error in one decade is in a direction opposite to that in another, comparisons, if not made with the utmost caution, will inevitably lead to wrong conclusions. In no period of history have our conceptions of pathology, our principles of treatment, our methods of medical education, and accordingly our mental attitude, changed so radically and so continuously as in the last thirty years, and in no department of medicine have these changes been more marked than in that which is concerned with cancers and tumors. It is safe to say that in no two of the last four decades have the conditions which influence diagnosis been so nearly alike as to make legitimate statistical comparisons possible.

Twenty years ago appendicitis, though described in the text-books, was practically unknown to the general profession. Deaths from that cause were almost uniformly ascribed to inflammation of the bowels. Before the days of Tate men used to talk of pelvic cellulitis, but knew nothing of suppurating tubes. The surgery of the gall-bladder had yet to be invented. Actinomycosis was known only to a few experts. The advent of aseptic and antiseptic surgery has changed entirely our conceptions of disease, and year after year old ideas have been discarded and new views accepted. Diagnosis has been rendered much more perfect, and the mistakes in diagnosis have occurred in other directions than formerly. It must be noted that the changes in modes of thought and action have taken place much more slowly in the rank and file of the profession than with the specialists, and it is only in the last five or ten years that Lyster's discoveries have borne their full fruit among the general practitioners.

Towards no class of cases has the mental attitude of physicians changed more radically during this time than towards all kinds of tumefactions and ulcers. This is due, first of all, to the change in pathological teaching which followed the appearance of Virchow's great work on tumors in 1863. The belief which prevailed at that time, that cancer was primarly a blood disease, paralyzed the operative surgery of that period. Why should the surgeon remove a cancer if the blood was full of cancer germs which would inevitably spread elsewhere in the body? The conception that cancer is in the beginning a local disease, curable if removed early and thoroughly, has inspired hope, and the indifference caused by despair has given place to an eager desire to detect the disease early and have it removed.

Another influence which operated powerfully in this direction was the growing confidence, due to the introduction of aseptic methods of both physicians and laymen, in operative surgery. The emphasis continually placed both in medical journals and in the daily press on the safety of operations, when conducted with strict asepsis, has generated an exaggerated sense of security not warranted, I fear, by the results of many operations. Women who formerly shrank from the slightest surgical procedure, nowadays clamor for abdominal sections as the shortest way out of pain and trouble, and general practitioners who, in other days, consented with reluctance to have their patients operated on by experts, now plunge boldly into the gravest surgical operations. Little hospitals are established in almost all of the small cities, and the country around is scoured for surgical cases. The way to find diseases is to hunt for them. Twenty years ago the family physician would not see a cancer until it was forced upon his attention; nowadays it is a wise tumor that can escape detection.

The influence of this change in mental attitude on the diagnosis of tumors and cancers has been very marked. It is shown not only by a more general and earlier recognition of the disease where it exists, but also by a disposition to diagnosticate malignant disease in doubtful cases, which are often altogether different in character. There has been, undoubtedly, a marked improvement in diagnosis, but with it the tendency to error has been in an entirely different direction. Fifteen or twenty years ago physicians were discouraged by the great number of cases of malignant disease which came for a diagnosis when they had already become hopeless. Today, with the constantly growing disposition to operate, benign tumefactions and ulcers, which are often curable by simpler means, are pronounced malignant and subjected to serious operations. This is true of tumefactions, inflammatory or cystic, of the mammary gland, and of many doubtful enlargements of the uterus, but is especially so of abdominal and thoracic disorders. The effect of such tendencies on mortuary reports is evident, but, I think, very much underestimated.

The diagnosis of malignant disease from inflammatory tumors and from chronic ulcers due to tuberculosis, syphilis and obscure forms of septic infection, is often very great, and the bias of the physicians cannot fail to influence, very decidedly, the character of the death certificates. This is a very important consideration when we examine into the correctness of certain very positively expressed opinions that cancer is becoming more prevalent. Before 1870 there were no statistics of any value whatever in this connection. Since then the changes in the attitude of the whole profession of the civilized world towards the pathology and treatment of all diseases have been so constant and so great as to be revolutionary in character. In America the medical profession of even ten or twenty years ago is not to be compared in intelligence and efficiency with that of today, with its multitude of highly educated, scientific and competent young men, who have brought into it a vigor and enthusiasm never before known.

The German statisticians recognize as one factor in the apparent increase of cancer, that there are more educated physicians now than formerly in Germany, and that a much greater proportion of cancer patients enter the hospitals for treatment. In the Stuttgart statistics, which have evidently been compiled with great care and with an earnest effort to draw correct conclusions, the figures show an increase in the prevalence of cancer, but there are indications in the text that the compilers accept the results with some hesitation. It is significant that the great bulk of the apparent increase is in the abdominal cases, while tumors of organs which are accessible to the touch and sight are comparatively little affected. In Stuttgart and Berlin, indeed, there has been in the last half of the thirty years period between 1873 and 1902 a remarkable and pronounced decrease in the relative number of uterine and vaginal cancers. The same is true in Stuttgart of cancers of the breast.

It is curious that the apparent increase in the prevalence of cancer is greater in men than in women, a fact which would seem to indicate that the increase was due in great part to a change in methods of diagnosis. Templeman remarks, as the result of a study of the mortality reports of Dundee between the years 1877 and 1901, "That during the same period there has been a great improvement both in clinical and pathological diagnosis, as well as in death certification, and consequently a considerable diminution in returns from such indefinite conditions as old age and disease of the various organs, and that this must to a considerable extent have helped to swell the returns of death from cancer." He is, nevertheless, of the opinion that the "increase is a real and substantial one, though by no means so great or so alarming as the general public believe or as a superficial glance at statistics would seem to indicate." In Templeman's statistics, cancer of the mouth and throat are said to have greatly increased, but as the records of other throat diseases is not given, there are no means of judging to what extent the increase may be due to "improved" diagnosis.

Newsholme, as the result of his investigations, states that statistics as far as they go do not justify the conclusion that an increase in cancer mortality has occurred within recent years.

The information obtained from life insurance records are even less reliable than the mortuary reports of health boards; they do not, in the first place, take in the whole community, but only such as are insured. As persons suffering from ill health are not admitted to their benefits, the malignant diseases which supervene upon old ulcerations and inflammations are not adequately represented. The data on which the life insurance reports are based are, therefore, insufficient and are rendered still more dubious by the changes which have taken place in the methods in which life insurance business has been conducted during the last thirty years. The officials who compile these reports are mainly concerned in estimating the probabilities of life and are, therefore, as a rule, unfamiliar with such investigations as are necessary in determining the prevalence of cancer.

Thus Juliusburger, in an article on "7081 Todesfalle an krebs von 1885-1899 bei der Friederich Wilhelm, Preussichen Leben und Guarantie Versicherungs Aktien, Gesellschaft in Berlin," forgets to state the number of persons insured during the years in question. He does not compare the number of deaths from cancer in the three companies with the number of persons insured of the same sex and age, but compares the mortality of cancer with the total number of deaths. Thus from 1884-1889 inclusive the deaths from cancer in the life insurance class were ten and nine-tenths per cent of the total number of deaths. During the next quinquenium nine and six-tenths per cent, and during the last five years of enumeration eleven and one-tenth per cent. He judges from this that cancer has increased in prevalence during the period of fifteen years. It is evident that such figures may have been the result of various conditions. Thus, first, cancer may have actually increased in that community; second, the mortality from other forms of disease may have been much diminished; third, many diseases which at the beginning of the period were classed otherwise, were at the latter part called cancer; fourth, that cancer may have either increased or diminished in comparison with the total number of insured in the different periods; and fifth, that changes in the requirements of admission and in the regidity of examinations may have resulted in the admittance into the company of more numerous invalids.

In fact, such methods of manipulating data are unscientific and misleading.

After a careful study of such statistics as I have been able to obtain, I have not been able to find any convincing evidence that the human race is any more susceptible to malignant disease than it was twenty or thirty years ago. There may be a small actual increase in civilized communities due to the improvement in general hygiene and a lessened mortality from other diseases. As cancer is a disease to which people are more liable after they pass the age of thirty years, it is evident that cases of this disease will increase in number when the relative number of people living beyond that age grows larger. If nobody died before the age of thirty cancer would be more prevalent than now, although the susceptibility of the race would remain the same. I am of the opinion that the apparent increase, which has so disturbed many surgeons, is fully accounted for by the changes in professional efficiency and in the professional attitude towards tumors.

In savage life, where the weakly die young and few grow to be very old, there should be relatively fewer cases of cancer than in civilized communities. I have, however, never been able to trace the statements in the books to that effect to any trustworthy authorities. In fact, the suspicious reserve common to all savages must make the necessary investigations extremely difficult. Many years ago I tried to get some definite information regarding the prevalence of tumors and cancers among North American Indians. I sent circulars of inquiry to all the medical men connected with the Indian agencies and to United States Army surgeons, and to all others from whom I could hope to learn the facts of the case. I received numerous replies, but the statements were so contradictory in character and were so evidently the results of personal impressions and so seldom the result of actual investigation that I could not utilize them for scientific purposes. Savage women will rarely consult men for their personal ailments. I was told by Doctor Valentine McGillicuddy, who was for several years Indian agent among some of the wild tribes, that he had known Indian women to die in childbirth rather than accept the aid of a white physician. The investigation of this subject belongs properly to the governments controlling savage tribes, and we should endeavor as a profession to secure the aid of all such in getting data which could be trusted for this kind of statistical work.

It is a serious question whether anything can be done to secure more trustworthy data regarding the varying prevalence of malignant disease. There must come a gradual improvement in the character of death certificates with the improvement in the training and standing of the medical graduate. It is probable that there will be in the near future no such radical changes in the conceptions of disease as have, during the last thirty years, so altered the attitude of medical men towards all pathological questions. If the subject of cancer should be regarded by the profession from nearly the same standpoint for several decades, we might form an opinion not widely incorrect as to the relative frequency of such diseases in successive years, even though the data themselves were very imperfect. It might be possible by a more united effort on the part of the profession to secure the more active coöperation of civilized governments in the investigation of some of the many questions which arise in connection with malignant disease. The question of the influence of diet in its production should be studied in the rice eating nations, in the pastoral tribes and among those who eat largely of meat. We need more exact information as to the prevalence of cancer in the hot, temperate and cold climates, in the white, yellow and black races, and as influenced by occupation, habits of life and by other diseases. Investigations of far-reaching and exact character can be made only by international agreement and effort. Until such shall have been made and until we have data on which we may found reasonably correct conclusions, the profession should be guarded in the statement of opinion. I myself feel that the loudly expressed opinion that cancer is alarmingly on the increase is not supported by any exact knowledge in our possession.

HISTORICAL SKETCH OF THE NERVES OF THE FEMALE GENITALS—THE PELVIC BRAIN.

(A.—MACROSCOPIC.)

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From the stately rhythm and periodic persistalsis of the uterus in labor the early observer must have been impressed with the nerves governing the genitals. However, from the unfortunate dogma of the church the light of knowledge, of anatomy, and physiology was denied mankind by prohibiting human dissection. So far as I have been able to note almost all observations on the nerves of the genitals (uterus) previous to the fifteenth century were almost valueless. Among the first names I find in literature referring to the nerves of the uterus is that of A. Vesalius, a Belgian by birth, professor of anatomy at the famous school at Padua, Italy. He was born in 1514 and died in 1564. Vesalius made the general statement (partly false and partly true) that the cervix was supplied by the sacral nerves (spinal), while the fundus was supplied by the sympathetic. This view of Vesalius generally prevailed for two centuries, and was practically confirmed by the following famed eponymic names in anatomy: Eustachius (———; died 1574), Regener de Graaf (1641-1673), Thomas Willis (1622-1675), Albert Haller (1708-1777), Johann G. Walter (1734-1818). With investigation (anatomic and physiologic) and lapse of time views changed, especially among the French, English and Germans. Definite records of dissection and observation on the nerves of the tractus genitalis (uterus) begin to accumulate in literature.

Eustachius (———; died 1574), an Italian anatomist of Eustachian tube fame, published at Amsterdam in 1722, "Tabulæ Anatomicæ." Eustachius described the nerves connecting the lumbar ganglia with the hypogastric plexus, which in union with branches from the sacral nerves arrived at the side of the uterus.

Regner de Graaf (1641-1673), a Dutch anatomist of Graffian follicle fame, published at Amsterdam in 1705, "Opera Omnia." He dissected and pursued the nerves to the uterus, ovary, oviduct and ligamentum latum. The presentations are schematic and description crude.

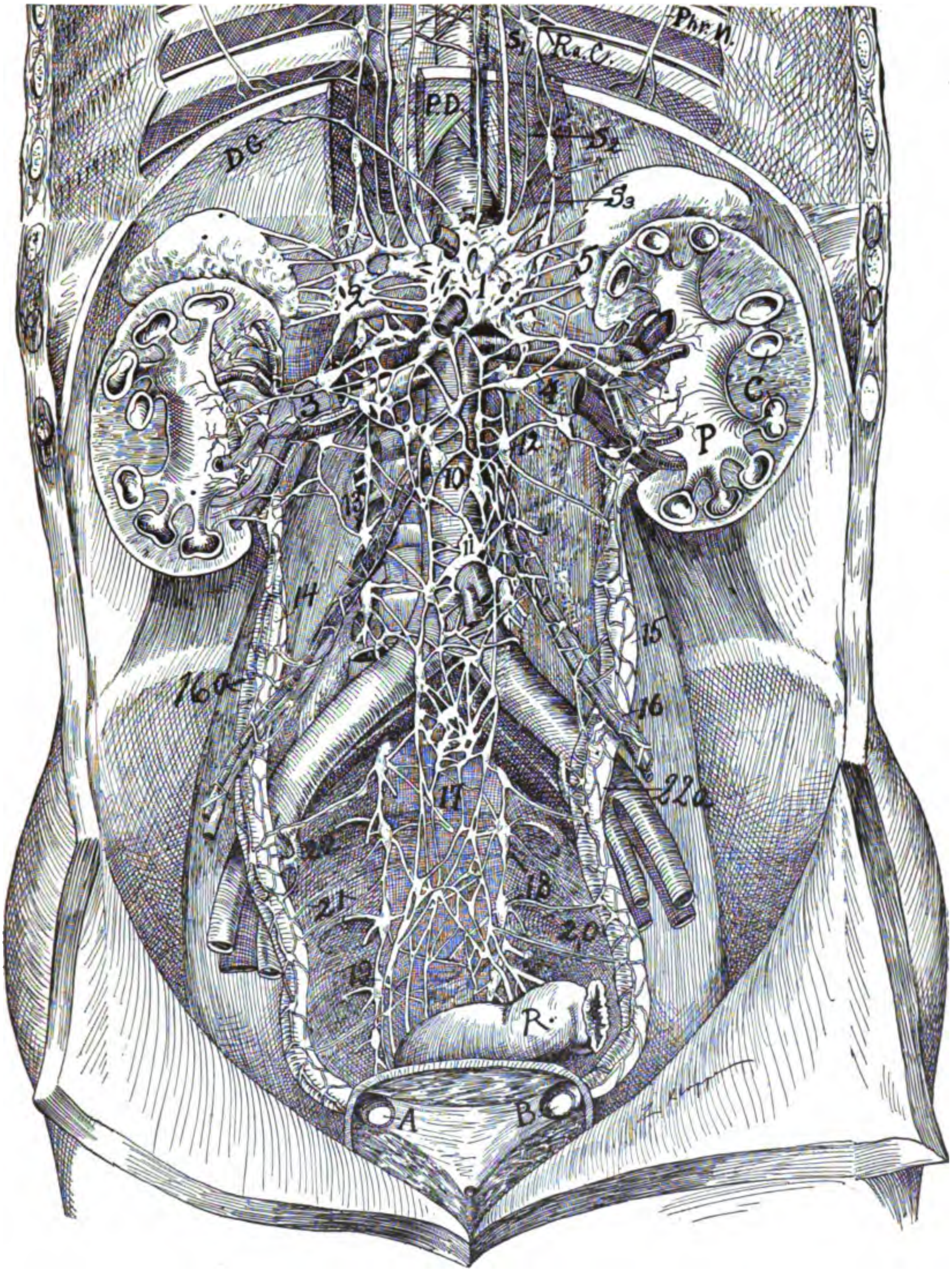

FIGURE I.—An Illustration of the Abdominal Sympathetic Nerves of the Male, Accompanied by General Ureteral Dilatation. Drawn from a specimen I received at an autopsy through the courtesy of Doctors W. A. Evans and O'Byrn. 1 and 2, abdominal brain; 10 and 12 represent the spermatic ganglia emitting their plexuses along the spermatic artery; H represents the coalesced hypogastric ganglia.

Thomas Willis (1622-1675), an English anatomist and philosopher of Circle of Willis fame, published at Geneva in 1680, "Cerebri Nervorumque Descriptio." Willis first described the course of the ovarian nerves, though defectively. He styled the solar plexus *cerebrum abdominale.*

Albert Haller (1708-1777), a Swiss anatomist of multiple eponymic fame, published at Lausane in 1778, "Elementa Physiologiæ." He limited the origin of the ovarian nerves to the plexus renalis and lateral sympathetic chain only. This error was repeated by Tiedemann in his 1822 publication. He left no illustration.

R. Vieussens (1641-1716), a French anatomist of multiple eponymic fame (the ganglion of Vieussens—solar plexus), left a rough presentation of the sympathetic.

Johann Gotlieb Walter (1734-1818), a German anatomist of "coccygeal ganglion" fame, published at Berlin in 1783, "Tabulæ Nerv. Thoracis et Abdominis." He presents several excellent copper plate tables of the thoracic and abdominal nerves which have become famous for accurateness and careful preparation. To 1875 Walter's tables were the best presentation of the sympathetic, especially the best and most accurate in their presentation of the sympathetic nerves supplying the female tractus genitalis. Walter's tables are not schematic but naturally correct, excelling the later much lauded tables of Tiedemann (1822). It is the first presentation of the tractus genitalis in its natural position and in connection with the pelvic and abdominal viscera. Unfortunately the plexus aorticus, and especially the plexus hypogastricus, is incompletely presented. Also the course of the nerves in the uterus and ovary is not indicated. Walter was the first who presented a ganglion on the lateral borders of the cervix uteri. Hence these nerve masses or nodes should be known by the eponym "Walter's cervicouterine ganglion." Walter's plates of the sympathetic are superior to those of Tiedemann, but are not so well known. It is a rare book. One must send to Washington to secure a copy.

William Hunter (1718-1783), celebrated English obstetrician, published an atlas on the nerves of the pregnant human uterus which is a noteworthy work. I could find no presentation of the uterine nerves originating from the sacral nerves in the atlas. Hunter asserted that the uterine nerves all arise from the intercostal, that they assume the same course as the blood-vessels, and that therefore on each side will occur a plexus spermaticus and plexus hypogastricus. Also a plexus springs from the ganglion semilunare, and while it passes to the uterus is strengthened by branches from the intercostals. The plexus aorticus emits nerves to the plexus renalis which gives origin to the plexus spermaticus. The plexus aorticus divides into two nervi hypogastrici distal to the aortic bifurcation. Each hypogastric nerve divides into a dorsal branch supplying the rectum and a ventral branch which follows the arteria uterina to supply the uterus. The greatest number of nerve branches tend toward the cervix uteri, according to Hunter. He

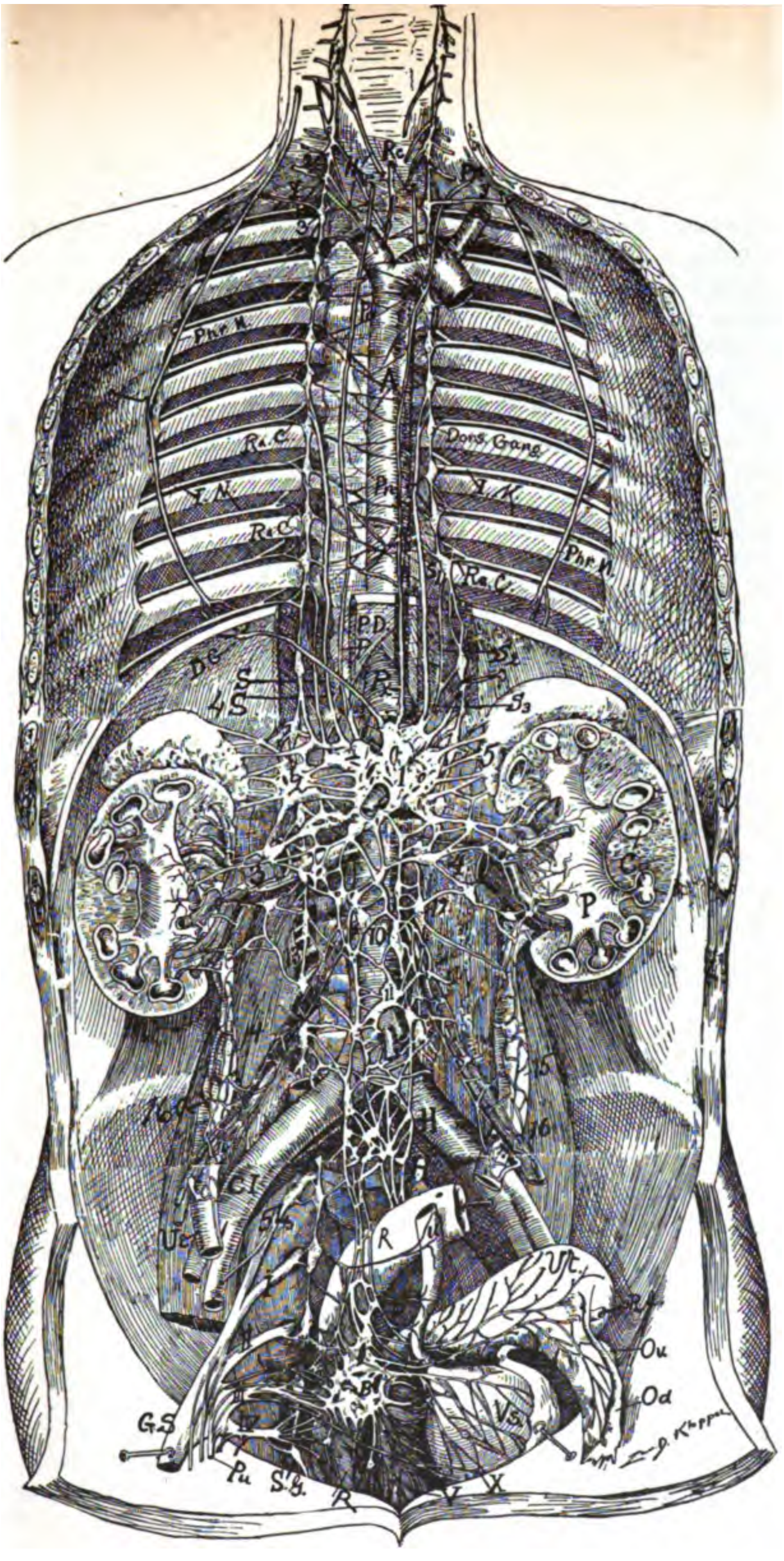

FIGURE II.—An Illustration of the Sympathetic Nerve. 1 and 2, abdominal brain. B represents the pelvic brain or ganglion cervicale. Observe the profound and intimate connection between the abdominal brain (1 and 2) and the pelvic brain (B) by means of the plexus aorticus (10 and 12) and plexus hypogastricus (H). Note the lateral chain of the sympathetic ganglia from the cervical ganglion (1) to the last sacral ganglion (S G). 1 and 2, abdominal brain, is the major assembling point of the plexuses of the abdomen. Observe the plexus aorticus with its multiple ganglia and two lateral cords extending from the abdominal brain (1 and 2) to the bifurcation of the aorta. Next note the hypogastric plexus, beginning at the aortic bifurcation and ending practically in the pelvic brain (B). H, the hypogastric ganglion is a coalesced, impaired organ. The major sympathetic ganglia are located at the origin of arteries, hence every abdominal visceral artery has at its origin a definite ganglion. In drawing the pelvic brain suggestions of Frankenhauser were employed.

believed that the uterine nerves increased in dimension during gestation, furnishing no proof by specimen.

John Hunter (1728-1793), the famous brother of William Hunter, asserted that the nerve did not increase in dimension during gestation, also adding no proof by specimen.

William Hunter shows sympathetic nerves supplying the cervix, corpus and fundus uteri. Previously and subsequently to Hunter's time it was a widespread dogma that the sympathetic nerve supplied corpus and fundus uteri only—not the cervix uteri.

Johann Friedrich Osiander (Son, 1787-1855), obstetrician at Goettingen, published a prize essay in 1808 on "Nerves of the Uterus," noting that he believed that nerves were present in the uterus but he could not detect them.

Friedrich Benjamin Osiander (Father, 1759-1822), obstetrician at Goettingen, inventor of uterine traction forceps, asserted, in his "Handbook of Obstetrics," 1818, that he doubted if any man had seen nerves in the uterus.

Friedricus Tiedemann (1781-1861), German, professor of anatomy in Marburg, 1804, in Landshutt to 1816, in Heidelberg from 1816 to 1844. Published at Heidelberg in 1822 "Tabulæ Nervorum Uteri," which has become extensively and favorably known, many-fold copied, and prized as the best presentation of the nerves of the uterus in connection and with the natural position of the viscera. Tiedemann's plates are schematic, defective and inferior to those of Walter—his predecessor by thirty-seven years. Tiedemann's plates, like Walter's and Hunter's, are the most imperfect in presenting the relations of the sacral nerves to the hypogastric plexus and uterus. Tiedemann advocated that the nerves of the uterus were enlarged during gestation and atrophied during senescence.

J. G. C. F. M. Lobstein (1777-1815), a French anatomist and obstetrician at Strassburg, published at Paris in 1823 "De-Nervi Sympathici Humani Fabrici," et cetera. Lobstein accentuated the plexus mesentericus superior and inferior. He practically denied the existence by the plexus spermaticus.

My observation of Lobstein's book on the sympathetic induces me to think that he obscured and retarded its knowledge rather than advanced it. For fifty years, to 1875, no special work appeared on the nerves of the tractus genitalis of the female. The general assertion for half a century, on whose authority I know not, was that the sacral nerves supplied the cervix (hence sensory) and the sympathetic the body and fundus (rhythmic). In 1839 an atlas to the book of Francis Joseph Moreau (1789-1862), entitled "Traite Pratique des Accouchmans," appeared a new illustration of the nerves of the pregnant uterus after J. M. Jacquemier (1806-1879). It is schematic, defective, imitates Tiedemann's plates and their errors, and adds practically nothing new.

From 1838 to 1846 occurred the fierce polemics on the nerves of the

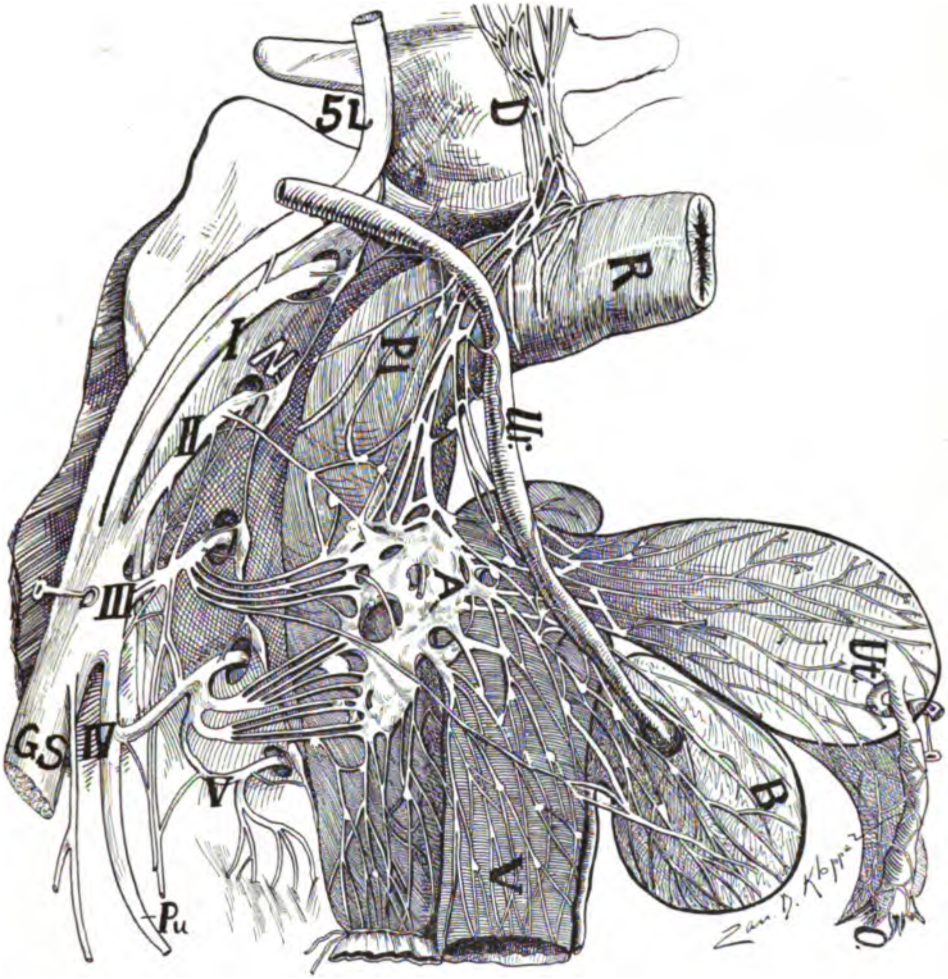

FIGURE III.—PELVIC BRAIN OF AN ADULT. This illustration was sketched from a dissection of a woman about forty years old. A, pelvic brain. The II, III, and V, sacral nerves, (viceral nerves—pelvic splanchnics) join the plexus interiliacus (PI) to form the pelvic brain. I dissected the specimen under alcohol.

uterus between Robert Lee and Thomas Snow Beck, chiefly found in the "Philosophical Transactions." Robert Lee (1793-1877), an English obstetrician, physician to the British Lying-In Hospital, published several papers on the nerves of the uterus from 1838 to 1846. Lee claimed to find under the perimetrium several nerve plexuses which were connected with the ovarian and hypogastric plexuses as well as the sacral nerves. Since Lee produced no convincing evidence, no microscopic demonstration as regards the cellular structure of the claimed nervous ganglia, suspicion arose among his colleagues (especially Thomas Snow Beck) that he had mistaken elastic fibres, connective or muscular tissue of the uterus for nerve plexuses. Lee was an Englishman of typical vigor, possessing the spirit of progress, and was not easily turned aside by adverse criticism of opposing colleagues. He said the processes which he had held for nerves branched with the arteries of the uterus, a fact which, according to Lee, occurred nowhere with elastic or muscular tissue. By an industrious prosecution of his dissecting labors he rediscovered, in 1841, Walter's cervicouterine ganglion (of 1783 publication) and proved it a constant structure.

Lee's monograph, "The Anatomy of the Nerves of the Uterus—1841," lies before me. It is an excellent labor by an earnest investigator. It contains two plates about 10x10 inches, illustrating the dissected nerves and ganglia of two pregnant uteri (one in the sixth and the other in the ninth months of gestation). Lee said, in short, that his dissections prove that the uterus possesses a great system of nerves, that they enlarge with gestation and return to the original condition subsequent to parturition. Also, if the nerves of the uterus could not be demonstrated to exist, its physiology and pathology would be completely inexplicable.

Lee repeatedly demonstrated the cervicouterine ganglion in the pregnant and nonpregnant uterus. He showed that the plexus hypogastricus ended in the great cervicouterine ganglion, which he claimed was composed of six or seven smaller united by nerve strands, and located on the lateral border of the cervix uteri. He noted that the branches of the second and third sacral nerves entered the cervical ganglion. Lee located a ganglion at the junction of the uterus and the oviduct. He also located a subperitoneal ganglion, on the dorsum of the corpus uteri and one on the ventrum of the corpus uteri of extensive surface dimension. These subperitoneal ganglia, according to Lee's illustrations, extend over large surface areas of the corpus uteri and stand in connection with the hypogastric plexus and cervicouterine ganglion. Modern investigation, especially by the aid of the microscope, demonstrate that Lee's extensive subperitoneal ganglia do not exist. Later in Lee's dissecting labors he had Dalrymple make microscopic sections of the nerve plexuses which confirmed their nervous structure, but no mention is made of a microscopic examination to confirm the nervous structure of the uterine ganglia. Robert Lee located three vesical ganglia, namely, (a), external vesical ganglia;

(b), middle and (c), external vesical ganglia; later he described but two internal and external vesical ganglia. Doctor Robert Lee made valuable additions to the literature of the nerves of the uterus. His labors aroused vigorous opponents and memorable polemics by which was instigated extensive additional researches. He rediscovered Walter's cervicouterine ganglion, hence, the memory of this earnest investigator should be entitled to the eponym, "Lee's cervicouterine ganglion."

Thomas Snow Beck (1814-1846), an English anatomist, published in 1846 in the "Philosophical Transactions—XVI," investigations concerning the nerves of the uterus which were almost a complete negation of Lee's views. Thomas Snow Beck claimed that Lee's cervicouterine ganglion was merely a mass of connective tissue containing a few small ganglion cells; that it was due to the union of the branches of the sacral nerves and hypogastric plexus. He similarly disposed of Lee's other uterine ganglia. Thomas Snow Beck gave detailed descriptions of the uterine nerves, adding some illustrations which contain numerous errors. He, like Lee, had prepared the specimens on the extirpated genitals—not while they were *in situ*. This insured confusion, non-accuracy, and supposed schematism. Thomas Snow Beck introduced the term *pelvic plexus,* which is the result of the union of the branches of the sacral nerves (II, III and IV) with the distal end of the hypogastric plexus. According to Thomas Snow Beck the second sacral nerve sends one branch to the pelvic plexus, the third sends twelve or thirteen, the fourth, five or six. Small ganglia are distributed over the pelvic plexus which sends nerves to the bladder, vagina (ten to twelve) and rectum, but not to the uterus. Thomas Snow Beck indicates that many of the uterine nerves are very fine, thread-like and without plexiform character. Thomas Snow Beck's illustrations are obscure, the descriptions contradictory, and doubtless prepared after being extirpated from the body, which increased the errors. He denied the claim of Robert Lee that the uterine nerves enlarged in dimensions during gestation. Thomas Snow Beck's iconoclastic negation of Lee's conclusions in reard to the nerves and ganglia of the female genitals served rather as a sample of medical polemics of those times than to enhance knowledge. The work of Clay, 1845, and that of Swann, 1846, "The Physiology of the Nerves of the Uterus," were not to me accessible, but since I find nowhere citations from them, perhaps they contain nothing new.

Antoine Joseph Jobert (de Lamballe) (1799-1867), a French anatomist and surgeon, published in 1841 in *Comptes rend de science de l'Academie,* Tome XII, Number XX, his "Researches sur la disposition des nerfo de l'uteres." His illustrations are faulty and his work adds little new data. Jobert announces that no nerves penetrate the portio vaginalis uteri.

Ludwig Moritz Hirschfield (1804-1876), professor of anatomy at Paris and Warschau, and Jeon Baptiste Francoise-Leville (1769-1829), French anatomists, published in 1853 "Neurologie des cript et iconographie du system nerveaux." The same illustrations are employed in the Atlas of Savage, 1863. The illustrations are not clear and visceral positions with nerve relations are incorrect.

F. Frankenhauser (—— 1894), a German obstetrician, published at Jena in 1867 "Die nerven der Gebaermitter." This book is excellent, accurate, comprehensive, unique and instructive. Though a book of eighty-two pages only, it is a monument of industry for all time. His descriptions are accurate, his illustrations are according to nature. I am indebted to Doctor Frankenhauser for his labors in the sympathetic nerves, especially those of the tractus genitalis. His honor is admirable in crediting justly to every author his share in the developmental knowledge of the sympathetic nerves. Other authors have labored in the macroscopical field of the sympathetic nerve, but space forbids further mentions.

(B.—MICROSCOPIC.)

Reliable microscopical examinations of the nerves of the tractus genitalis are limited in number and separated by long intervals. Microscopic anatomy began about 1850. W. M. Hunter (1805), Robert Lee (1846) and Friedericus Tiedemann (1822) claimed that the uterine nerves increased in dimension during gestation. John Hunter, the brother of William Hunter, denied that the nerves enlarged during gestation, that the thickening was due to multiplication of the connective tissue.

Herman Freidrich Kilian (1800-1863), a German obstetrician, published in 1851 in the *Zeitschrift fur Rationelle Medicine,* Bande X, a work "Die Nerven des Uterus," which founded for all time the microscopic structure of the uterine nerves. Kilian attempted to determine which part of the uterus was supplied by sympathetic and which by spinal nerves by aid of the microscope. He claimed that both sympathetic and spinal nerves supplied all parts of the uterus, but sympathetic nerves only were found in ovarian plexuses. He claimed that the cervix is richer in nerves than the body. Ganglia saw he nowhere in the uterus. Kilian announced an age relation of uterine nerves. During pueritas the nerves were limited in number and dimension. During adolescence the number increased. During gestation the number and dimension were marked. During senescence the nerves became lessened in number and dimension. Kilian concerned himself with: (a), the origin of the uterine nerves; (b), the changes experienced by a nerve passing through the uterus; (c), the age relations. Frankenhauser of Jena, in 1867, Koerner of Breslau, in 1864, Keher of Giessen, in 1864, Polle of Goettingen, in 1865, Frey, 1867, Kolliker (1817—living) and Koch (1843—living) in 1865 published accounts of ganglia on the uterine nerves (in addition to the cervico-uterine ganglion). To 1867 little was added to the great work of Kilian except ganglia on the uterine nerves and special nerve ending in the uterus.

ORIGINAL ABSTRACTS.

SURGERY.

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THE TREATMENT OF BURNS, AND SKIN-GRAFTING.

SNEVE, of Saint Paul, Minnesota (*The Journal of the American Medical Association,* July 1, 1905), calls attention to the fatality of large burns, as well as to the extreme pain and suffering caused by frequent dressing according to modern methods.

He would classify burns into four degrees: Hyperemia of the skin—first degree; destruction of the skin as shown by vesication—second degree; destruction of the derma—third degree, and of the deeper tissues—fourth degree. He observed that burns of the face that were exposed to the air speedily crusted over and healed, while protected burns would heal slowly. Dressings which retain moisture from perspiration and exudate, form an infected poultice which favors toxemia, fever, nephritis, et cetera.

He reports a number of cases, giving the treatment and results. The treatment is designated the open-air method and is best described by noting the treatment of a case. The patient was badly burned by falling into a scalding vat. When taken to the hospital he was given a bath in normal saline solution and was put into a room where a temperature of 90° was constantly maintained. Strychnine and normal saline solution enemata were given for shock, morphine to relieve pain and restlessness. The skin, where burned to the first degree only, was stimulated by alcohol rubs frequently applied. Blisters were carefully opened as soon as formed and contents carefully removed. Stearate of zinc as a dusting powder was applied to all exuding surfaces until adherent dry crusts were formed. The patient was placed in bed in such a position that the burned surfaces came as little in contact with the clothes as possible and remained exposed to the air. The burns healed rapidly and the patient left the hospital in a short time with smooth and flexible scars.

Shock is treated by giving drinks and enemata of cold normal saline solution. This is said to assist nature in removing the blood from the abdominal vessels. Local applications of warmth are applied to the extremities, and especially to the nape of the neck, chafing the hands and feet. To counteract the fall in temperature, give a hot bath and keep up the temperature of the room. Give saline transfusion that the heart may have more fluid to work upon. The only drug advised is adrenalin cautiously administered. A warning is given against whiskey, morphine, strychnia, digitalis, et cetera. He ascribes much of what is known as toxemia to occlusive dressings. To avoid this the surface must be kept clean and dry. The remaining skin must be kept in the highest state of function, to compensate the loss of eliminating area by burning. This is accomplished by cold sponging and friction, with careful maintenance of heat by artificial means.

Exhaustion follows long continued suppurations or even serous discharge from granulating surfaces. To prevent this grafting should be begun early. The grafts should be exposed to the air and not confined by dressings.

"*Summary.*—When first seen, burns, and more particularly scalds, are apt to prove deceptive as regards their degree, and it is wise to withhold prognosis in the beginning. Whenever occlusive dressings are kept on, even for forty-eight hours, I am confident that these will frequently convert a first into a second and a second into a third degree burn through confinement of the perspiration and maceration of impaired tissue. One of the remarkable things in this experience with burns is the small amount of pain suffered by the patients and its short duration when the wounds are left exposed to the air. Severe pain, when not obscured by shock, only lasts from six to twelve hours, and I think is better controlled by hypodermics of morphine than by any other measure. I would agree that as little morphine be given as possible: it should not be given when shock is present.

"Another astonishing feature is the character of the cicatrix after healing. In burns of the second degree, the skin is reproduced so well that only a white color marks the scar. Third degree burns result in smooth, flexible, skin-like scars. Two factors probably account for this: first, the tops of granulations which grow into the meshes of the dressings are not torn off, day by day, forminlg scar ridges throughout the substances of the scar which firmly anchor the skin covering and probably interfere with its nutrition; and second, nature seems better able to control the growth of the firm, small, healthy granulations which result from exposure to the air—a marked contrast to the flabby efflorescent masses seemingly growing without direction in the moist chamber of the occlusive dressings. Wagner estimates that a normal granulating surface the size of a saucer can be healed over in from eight to ten days.

"First, treat the shock as indicated above.

"Second, control the pain as necessary and keep everything from contact with the burned areas.

"Third, keep the patient surgically clean. Ordinary surgical principles govern here as elsewhere; bichloride of mercury, carbolic acid and other strong antiseptics are to be avoided when possible, because they are such powerful cell poisons that toxic effects both general and local are to be feared; the delicate coverings of the granulations will not stand escharotic action without interfering with the production of the smooth, flexible scars.

"Fourth, give frequent cold sponge baths to the sound skin with frictions, and keep the room at high temperature.

"Fifth, cut away all blisters, cleanse with normal salt solution, dry thoroughly and dust all second degree burns with stearate of zinc, carefully wiping away serous exudate until dry, brown, adherent crusts are formed.

"Sixth, leave third degree burns exposed without powder and keep surface clean until granulations are ready for skin-grafting.

"Seventh, to maintain and to preserve function, body and limbs should be exercised as much as possible; the eschars of burns to fourth degree should be removed when nature so indicates, and amputation should be performed when needed." C. G. D.

GYNECOLOGY.

By REUBEN PETERSON, A. B., M. D., Ann Arbor, Michigan.
PROFESSOR OF GYNECOLOGY AND OBSTETRICS IN THE UNIVERSITY OF MICHIGAN.
AND
CHRISTOPHER GREGG PARNALL, A. B., M. D., Ann Arbor, Michigan.
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THREE CASES OF REPAIR OF INJURY TO THE URETER: TWO BY TRANSPLANTATION INTO THE BLADDER, AND ONE BY END-TO-END SUTURE.

Under the above title, Lapthorn Smith (*American Journal of Obstetrics,* June, 1905) states that ureteral fistula may be acquired in any one of three ways: impaction of the head during parturition, compression of the ureter by clamps in vaginal hysterectomy for cancer, and accidental injury in abdominal removal of large tumors. Three cases are reported, an example of each class of injury.

Case I.—The patient had been in labor for two days with impaction of the head, later a large quantity of sloughing tissue came away and left a urinary fistula. Several attempts at plastic repair made by London surgeons failed. Smith also tried a plastic operation with the same result. Vesical transplantation through a median-line incision was then performed. It was necessary to open the peritoneum on account of technical difficulties. The ureter and bladder were joined by Van Hook's method, a drainage tube was inserted in the lower angle of the abdominal wound, running down to the bladder incision, the wound closed, and a self-retaining catheter introduced. Convalescence was uninterrupted, and the result in every way satisfactory.

Case II.—Vaginal hysterectomy by the clamp method for carcinoma of the cervix. When the clamps were removed there was a free flow of urine, which on examination was found to be leaking from the right ureter. Later, after the use of urotropin for some time, the ureter was cut above the fistulous opening and implanted into the bladder. The proximal end of the ureter was so short in this case that it was necessary to free the bladder from its pubic attachments in order to draw it up. The attachment of the ureter to the bladder was accomplished as in Case I. The catheter was not introduced until some time after operation, and several ounces of urine collected in the bladder. The operation was not successful, considerable leakage still being present. A second operation did not entirely close the hole; the fistula, however, was small and closed spontaneously.

Case III.—During an abdominal section for removal of a large broad-ligament cyst the right ureter was accidently wounded by cutting half way through it with scissors. The muscular layer was reunited for the whole extent of the cut by means of interrupted sutures. A second layer of running suture was placed over the first line. On account of technical difficulties in removing the cyst a portion of the wall was left behind, the edges being sutured to the abdominal incision. Drainage was used for both the sac and the wound of the ureter. Recovery was uneventful, there being no complication from the injury to the ureter. C. G. P.

OBSTETRICS.

By WILLIAM HORACE MORLEY, PH. B., M. D., ANN ARBOR, MICHIGAN.
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AND
WALES MELVIN SIGNOR, M. D., ANN ARBOR, MICHIGAN.
ASSISTANT IN OBSTETRICS AND GYNECOLOGY IN THE UNIVERSITY OF MICHIGAN.

A REPORT OF SEVEN CESAREAN SECTIONS

VOORHEES (*The American Journal of Obstetrics,* August, 1905), after a report of his cases with comments on them, devotes the remainder and major portion of his article to a consideration of operative deliveries with special reference to contracted pelves. The tenor of the entire article is a plea for the wider recognition of the broader field of conditions to which the Cesarean section is adapted.

From a lengthy statistical review he shows: that the mortality to the child is very large in all cases of operative delivery, by forceps or version; that this mortality is greatly increased by contracted pelves; and finally, that in Cesarean section there is a reduction of the fetal mortality to a minimum, and this is accompanied by a comparatively slight increase in the maternal mortality.

Cesarean section, as an operation, is simple but dangerous, and an education along the lines of surgical technic is essential. The chief danger in the operation is infection. If it were possible to avoid this in every case, the maternal mortality would be practically eliminated. Other dangers are hemorrhage, shock and embolism, more remotely intestinal adhesions, uteroabdominal fistula, hernia, and rupture of the uterus in a subsequent pregnancy. All these dangers, immediate and remote, are lessened by the continual improvement in modern surgical technic.

Except in extreme contraction of the pelvis, one is not justified in a section, until an attempted delivery by the natural forces has failed. The time for this attempt should be before full term, after the thirty-sixth week of gestation, or preferably after the thirty-eighth week. Vaginal manipulation and examination is not an absolute contraindication to the section, as is held by some writers, but every added possibility of infection is an added peril.

The employment of such measures as hysterectomy and oophorectomy as routine procedures to avoid a subsequent pregnancy is not justified by the reports of repeated sections, and the mother's chances for recovery are materially lessened by every added source of shock.

Symphyseotomy is a thing of the past, except under exceedingly rare and exacting conditions. Craniotomy on a living child is a gross error and almost unpardonable.

The article closes with a full bibliography of the subject.

W. M. S.

PEDIATRICS.

By ARTHUR DAVID HOLMES, M. D., C. M., DETROIT, MICHIGAN.

OBSERVATIONS ON INFANT FEEDING.

CHURCHILL (*Journal of the American Medical Association*, May 27, 1905) says much progress has been made in substitute feeding during the past decade. For instance, good breast milk is the ideal food for infants during their first year, otherwise feed accurate percentages of fat, sugar and proteids, and feed the individual case, not groups, et cetera. Many infants have been fed along these definite lines and the results noted and thus our knowledge much increased in respect to the indigestion of fat, proteid and sugar. The basis of all infant food is cow's milk, and as it is unstable, we today ask whether the child is suffering from fat, sugar or proteid indigestion. The author gives the typical symptom of each kind of indigestion. The commonest form being that of the proteids, due to excess of this element, causing severe colic, foul smelling stools, large curds and mucus. If the proteids are deficient the child grows anemic, and does not gain regularly in weight. Fat indigestion is apt to cause vomiting and diarrhea—greenish-yellow stools—containing an excess of fat. Deficiency of fat in the diet results in malnutrition and rickets, as evidenced in babies on proprietary foods. Sugar in high percentages may cause disturbances, characterized by wind colic, due to the excessive production of gas. Most proprietary foods contain an excess of sugar, and while most infants gain in weight at first, they are soft and flabby and resist disease badly. The treatment is to give less of the particular substance which is not properly digested. In other words, regulation of percentage feeding, increasing the strength of food and quantity very gradually, using the weight, the stools and the symptoms as a guide in changing the formula for each case.

PHYSIOLOGICAL THERAPEUTICS *VERSUS* DRUGS IN THE TREATMENT OF DISEASES OF INFANCY AND CHILDHOOD.

HOWELL (*Pediatrics,* February, 1905) says that he is a firm believer in the use of drugs, properly selected and thoroughly administered, but thinks great harm has been done and is being done by their indiscriminate selection and use. Physicians who have crowded waiting-rooms and who dispense their own drugs are especially prone to haphazard drug-giving. Their best judgment is not always in the ascendency. If drugs are found indicated, write a prescription for just what is indicated regardless of cost, and explain to patient that the medicine is an adjuvant to assist in recovery, and that more important than the medicine is the careful carrying out of directions as to diet, hygiene, et cetera.

The author takes up many of the more prominent diseases and shows that the treatment is preeminently physiologic and reminds us of the "fundamental principle" of Holt—never give a dose of medicine to a child without a definite indication.

CEREBROSPINAL MENINGITIS.

FOSTER (*American Journal of the Medical Sciences,* June, 1905) says no disease presents greater diversity in its mode of onset. In children the initial symptoms are apt to be referred to the gastrointestinal tract. Vomiting is often the first sign and this may be followed by a convulsion; later it is noted that the child prefers to lie on its side and that the head is retracted. Children appear to suffer less from the headache than do adults, probably due to the profound toxemia. It is certainly less marked in the epidemic meningitis than in the tuberculous form. There is often some boring of the head into the pillow and perhaps an occasional moan, but the sharp cries and the periods of screaming that evidence such acute pain in the tuberculous meningitis are but rarely seen in the epidemic type. A stuporous condition may prevail from the first and become more profound so gradually that as death approaches it is sometimes a surprise to find the heart still acting.

Leucocytosis is more pronounced in children than in the adult but the leucocyte count is not relied upon for diagnosis. The tache cerebrale is not as constant a sign as in the tuberculous form.

In the matter of treatment, efforts toward decreasing the suffering of patient and preserving his strength is the most we can do at present. Isolation, free ventilation and a room somewhat darkened, a fever diet, water *ad libitum,* and sedatives, opium being doubtless the best. Lumbar puncture is not only a certain means of diagnosis but the author believes it has a therapeutic value. It lessens the delirium, alleviates the headache, and often the patient regains consciousness. It is palliative only as I see no evidence in support of it as a curative measure. Laminectomy appears a more rational line of treatment, but too few cases have been operated upon to warrant conclusions.

ORTHOPEDICS

By IRA DEAN LOREE, M.D., Ann Arbor, Michigan.
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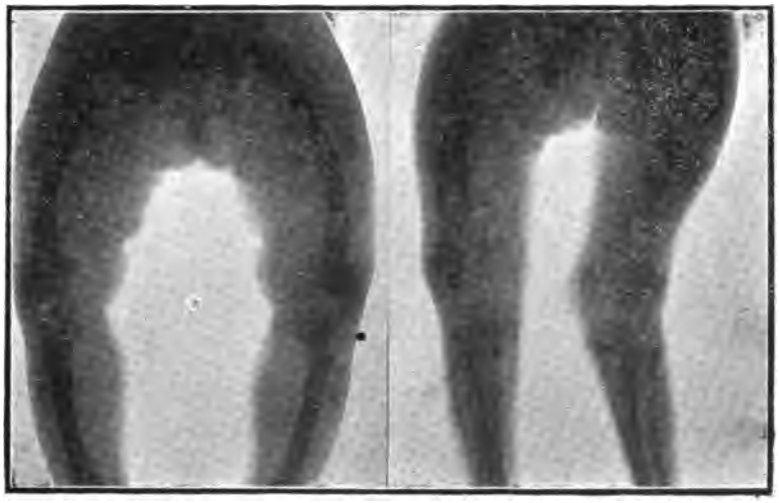
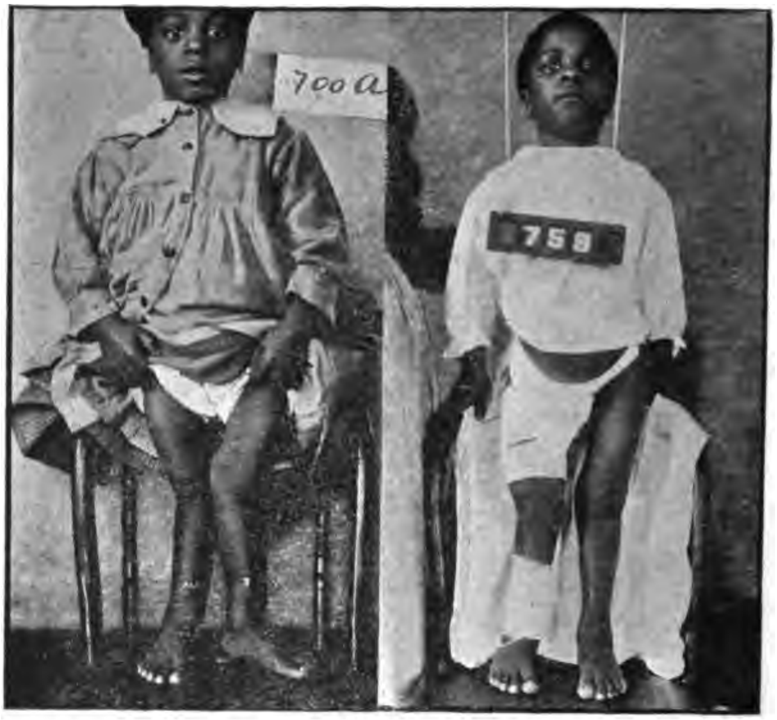
THE CORRECTION OF GENU VARUM AND VALGUM BY OSTEOTOMY.

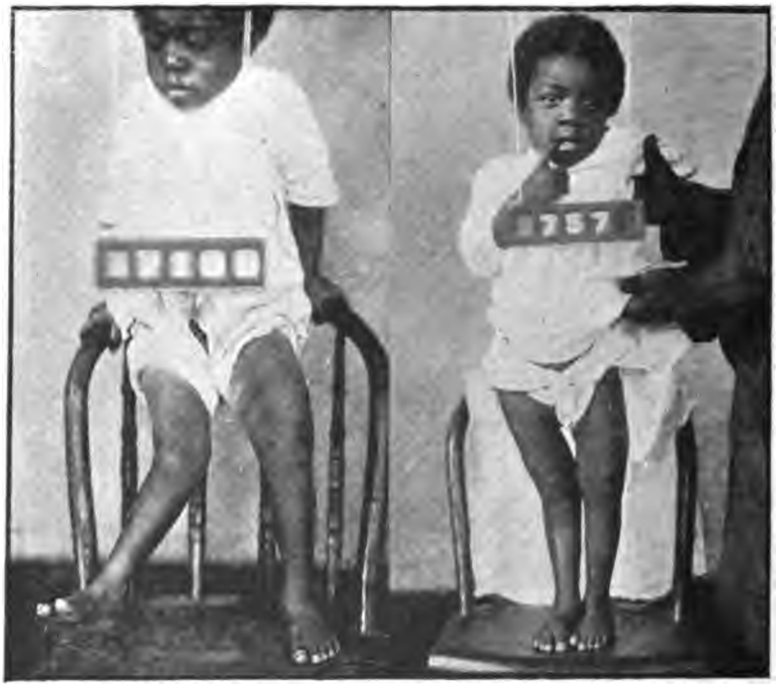
E. Denegre Martin, M. D., Professor of Minor Surgery in the New Orleans Polyclinic, gives (*New Orleans Medical and Surgical Journal*) a résumé of the causes of rachitis and follows with a report of five surgical cases operated upon by himself, with illustrations showing the conditions before and after treatment. The first radiographs show the different locations of deformity in varum and valgum. That for varum is located in the epiphyses above and below the knee, while the deformity of valgum is just the opposite.



Case I.—Patient was a boy, five years old, with genu valgum of both legs and anterior curvature of the tibiæ. The condition hindered running. An osteotomy was performed upon both tibiæ. Following this he did an osteotomy of the femurs. The results are shown in the second illustration.



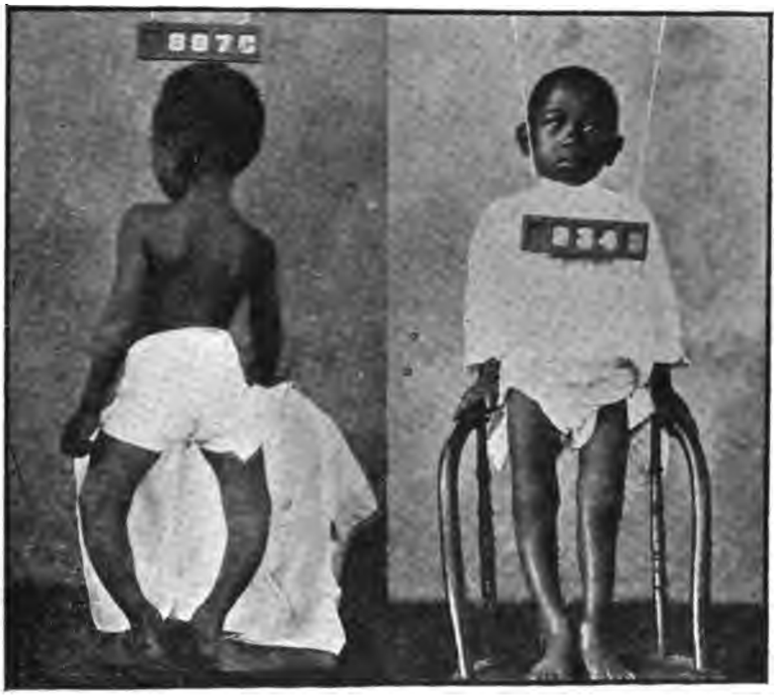
Case I.



Case II.

Case II.—This was a colored girl, four years of age, with genu valgum of the left and some compensatory deformity of the right leg. The deformity in the left leg was such that it was about right-angled to the body. The third illustration shows the condition before and after operation. He expects further results in this case by another operation at some future date. Correction by osteotomy.

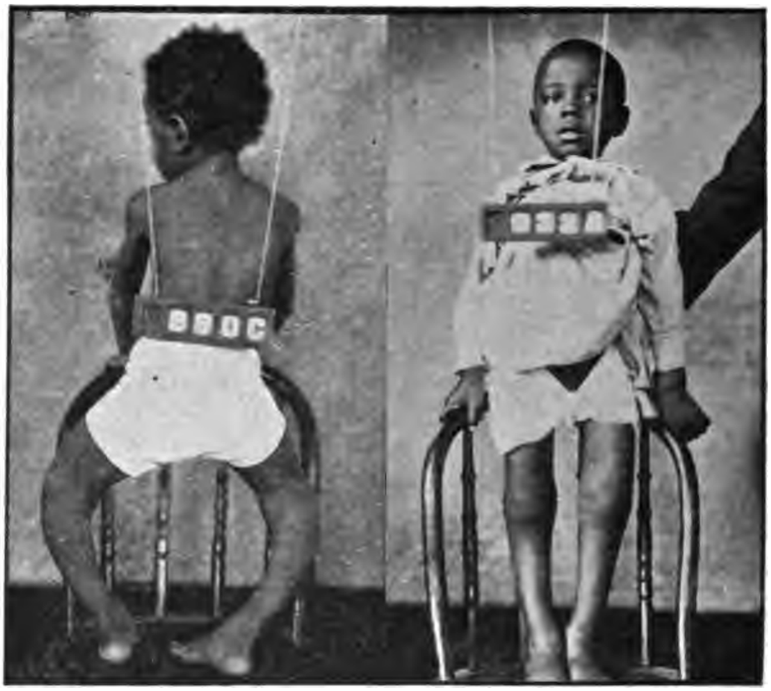
Case III.—The photographs taken of this patient show an aggravated case of genu varum of both limbs. He performed an osteotomy upon each femur but fractured the tibiæ with a Risoli osteoclast.



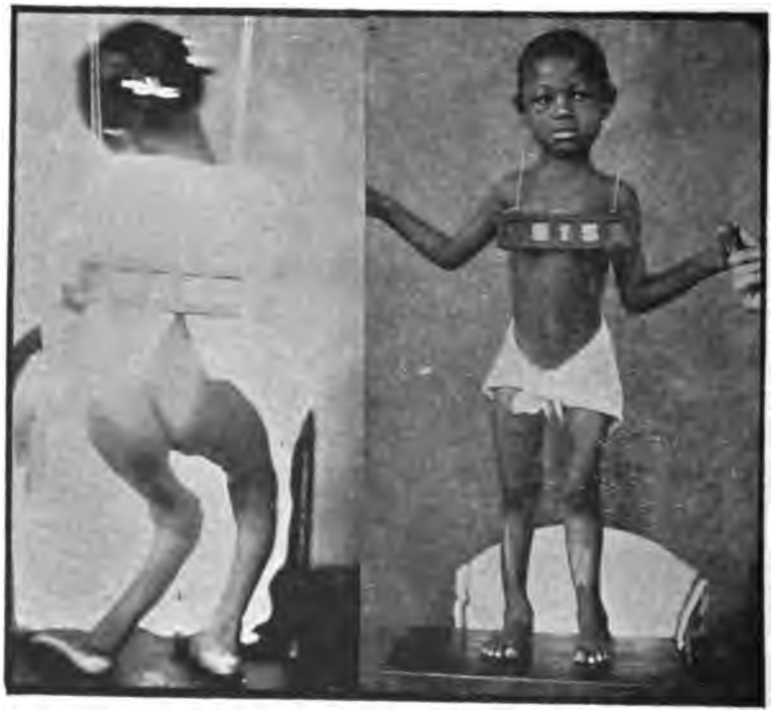
Case III.

Case IV.—An osteotomy was here performed upon both femurs and tibiæ.

Case V.—This patient had not only the very marked deformity shown in the lower limbs but also a curvature of the spine. The cuts show the amount of improvement obtained. Before her operation she had great difficulty in locomotion. Several operations were necessary before these results were obtained. He performed osteotomy with the chisel because he found the Risoli osteoclast too clumsy. However, he highly recommends the Grattan instrument for this work. The after treatment consisted of plaster-of-Paris dressings; none of the patients wore braces.



Case IV.



Case V.

OTOLOGY.

By R. BISHOP CANFIELD, A. B., M. D., Ann Arbor, Michigan.
PROFESSOR OF OTOLARYNGOLOGY IN THE UNIVERSITY OF MICHIGAN.

INFECTIVE SIGMOID SINUS AND JUGULAR THROMBOSIS COMPLICATED BY LEPTOMENINGITIS.

Richards (*Archives of Otology,* Volume XXXIV, Number III) reports the case of a male patient, age six years, with a history of chronic suppurative middle ear disease arising from one of the infective fevers. The present illness was caused by an acute process grafted upon the chronic condition. There is a subperiosteal abscess and a small cortical perforation. The inner base, upon opening, was found filled with fluid-pulsating pus. A Stacke-Schwartze operation was performed. The visceral plate of the mastoid was everywhere intact, except for a pinhole perforation over the sinus knee through which issued, with each pulsation of the brain, a thin fluid pus. The bone was removed from slightly beyond the knee to a point near the jugular bulb, and a moderate-sized epidural abscess evacuated. The pus was hemmed in by limiting pachymeningitis about the knee the size of a silver quarter. The granulations were not thick and the vessel was considered normal. The patient did well for four days, when the temperature rose suddenly to 104°, but fell during the night to 102.8°, then rapidly to 105°. There was stiffness of the neck and marked irritability.

The sigmoid sinus was now opened and a completely obstructing thrombus found, the consistency of which showed that it must have existed before the primary operation. Free bleeding was obtained from the upper end. The lower end was slit down and a soft liver-colored coagulum found extending from the cardiac side of the thrombus down into the jugular bulb. No attempt was made to curet the region of the jugular bulb nor to extract the clot. A jugular resection was at once performed, and after removing a clot about an inch in length bleeding was obtained evidently from the condylars, the inferior petrosal, or from both. The patient was returned to bed in good condition. The temperature was not affected by the operation; the irritability continued.

The following day lumbar puncture was made and the turbid fluid withdrawn. Microscopic examination showed streptococci in abundance, pus cells, and a diplococcus. Following the puncture the temperature fell quickly four degrees, remained there for fourteen hours, then again rose to 105°. A second lumbar puncture was made, showing streptococci in long chains, pus, blood, and diplococci. Symptoms of meningeal invasion increased, subdural irrigation was attempted but proved futile, and the child died in a few days, having presented the symptom-complex of a general cerebrospinal leptomeningitis.

The interesting points of the case are:

(1) What constitutes a legitimate suspicion that a sinus is thrombosed?

(2) That in many instances it is not at all certain whether a sinus is or is not thrombosed until it is opened.

(3) That a thrombus may be completely obstructive and yet escape detection.

(4) The dangers of not opening an exposed sinus, which for any reason seems suspicious.

(5) The dangers of trying to curet a thrombus from the region of the jugular bulb prior to jugular resection; for, though a return flow may be established, it cannot be regarded as a guarantee that the thrombus has been removed *in toto*.

LARYNGOLOGY.

By WILLIS SIDNEY ANDERSON, M. D., Detroit, Michigan.
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A CONTRIBUTION TO THE STUDY OF THE SECRETING MECHANISM OF THE NOSE.

Joseph L. Goodale (*Annals of Otology, Rhinology and Laryngology,* March, 1905) in this paper reviews our present information concerning the subject, in connection with additional personal investigations. The author cites the opinions of various observers and then propounds the following questions for investigation: (1) What is the nature of the glands of the nose? (2) Is the aqueous vapor which the nose imparts to the inspired air, derived from the glands or from the epithelial surface, between the orifices of the gland ducts? (3) What histologic alterations in the secreting mechanism are found in cases characterized clinically by changes in secretions?

The glands of the nose are serous and mucous, the distinguishing feature being the presence of secreting capillaries in the serous and their absence in the mucous glands. The largest portion of the aqueous vapor is derived by transudation through the canaliculi of the basement membrane and interspaces in the columnar epithelium. The histologic alterations are summarized as follows:

Simple chronic rhinitis is characterized chiefly by an increased development of the venous sinuses and of the glands. Hypertropic rhinitis exhibits an increased proliferation of the epithelial or of the connective tissue or of the glands, although these latter, as a rule, play a subordinate part, while no characteristic alterations in the canaliculi are observed. In atrophic conditions, the most important alteration in the present connection consists in the epithelial metaplasia, by which the pervious, columnar, ciliated epithelium and basement membrane is transformed into a dense, compact, squamous epithelium, lying directly upon a compact rete mucosa. The glands are diminished in number and size, but in a moderate degree, the mucous acini being distinctly alive. In vasomotor rhinitis, the characteristic alterations consist in a marked increase in the number and size of the canaliculi of the basement membrane, and in the perviousness of the overlying epithelium. With this is associated a marked, round-celled infiltration. The glands show a moderate increase in number and size, but there is apparently no increase in the amount of mucous degeneration, and it was not possible to demonstrate an increased activity in the serous glands.

As a result of these findings, several therapeutic considerations suggest themselves. In conditions characterized by increased mucous secretions, it is evidently useless to destroy a portion of the epithelium by caustics, unless better drainage or freer respiration are hereby induced. In atrophic rhinitis, the patient does not suffer from lack of mucus, and it is difficult to understand how tablets of mucin could be of service. The ozenic individual is greatly in need of more water in his nasal secretion and on theoretical grounds it would be desirable to introduce substances favoring exosmosis, especially of hygroscopic properties.

Finally, we have on theoretical grounds another means of altering the amount of fluid evaporated from the nasal mucous membrane. This consists in increasing or diminishing the respiratory changes in intranasal air pressure. If, for instance, we place a partial obstruction in the anterior nares, the degree of inspiratory rarefaction is increased and transudation of fluid consequently heightened. This may explain the improvement noted in atrophic rhinitis from the injection of paraffin.

On the other hand, removal of anterior obstructions is indicated in cases characterized by increased watery secretion, as in vasomotor rhinitis.

NASAL OBSTRUCTION AS A CAUSE OF DISORDERS OF NUTRITION.

Percy Friedenberg (*New York Medical Journal and Philadelphia Medical Journal,* April 22, 1905) draws attention to the important etiologic relation between digestive disturbances and diseases of the nose, pharynx and larynx. He speaks of the influence of smell and taste upon digestion and how these functions are obtunded by diseases of the nose and throat. The author dwells upon the baneful effects of mouth breathing, especially in infants. Nasal obstruction is deleterious in two ways: it interferes with respiration and interrupts the process of feeding and swallowing. The little one, forced to breathe through the mouth or suffocate, sucks spasmodically, with frequent stops for breath, gasps, strangles, gulps air and, later, vomits. These symptoms are almost pathognomonic of nasal obstruction due to adenoids. Mouth breathers have saliva of abnormal composition as well as lessened quantity. Deglutition is interfered with on account of lack of moisture to lubricate the food. Bolting of the food is a common practice in these cases due to the necessity of getting air. The swallowing of mucus is another source of gastric irritation. The author, in conclusion, calls attention to the perversion of the natural rhythm of breathing in those having obstructions to nasal breathing.

THERAPEUTICS.

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THE TREATMENT OF BRIGHT'S DISEASE.

Alfred C. Croftan, M. D., in the *Journal of the American Medical Association* of June 24 discusses the circumstances and treatment of Bright's disease. High arterial tension, he says, is the determining feature of this disease. This acts by causing nutritional disorders in various parts of the body, particularly in those organs that are supplied by end-arteries, as the kidneys, retina and brain.

The high arterial pressure that leads to Bright's disease, Doctor Croftan thinks, is caused by toxins circulating in the blood. The origin of the toxins is connected with abnormal degradation of albumins either in the intestines or in the tissues at large.

Deranged bowel function, by acting on the liver through irritating material sent into the blood, interferes with the normal activity of this organ and results in establishing a condition of hepatic insufficiency. With the bile perverted both as to its physical and chemical character it oozes through the hepatic capillaries slowly and in insufficient quantity. The organism is thus deprived of the benefit of its most important antiseptic secretion and is, in consequence, subjected to the disturbing effects produced by intestinal putrefaction.

"Bright's disease, as shown above, is a toxemia, presumably of intestinal and, by implication, of hepatic origin, involving, primarily, the cardiovascular apparatus, and, secondarily, many organs of the body, including the kidneys."

The treatment must be directed toward correcting the digestive disorders. Remedies for this purpose may act in two ways. They may either act upon the disturbing factors directly, or they may exert a beneficial influence by stimulating the natural defenses of the organism to greater activity.

Most of the so-called intestinal antiseptics act in both these ways at the same time, being antiseptics in character and stimulants to the liver. Or, in other words, they not only tend to destroy microorganisms that may be in the intestine, but they also increase the amount of bile, which in itself possesses marked germicidal powers.

Of the drugs used as intestinal antiseptics Doctor Croftan prefers sulphocarbolate of zinc to the other metalic salts, and sodium glycocholate to the free bile acids. The doctor also considers many of the organic peroxides useful. Small doses of the remedies used are recommended. The sulphocarbolate of zinc, one-half grain; the sodium glycocholate, one grain; the organic peroxides, one grain. When one of these remedies is used it is given at frequent intervals with twenty grains of bismuth subnitrate. The bismuth acts as an indicator, showing when intestinal antisepsis has been accomplished. When the stools are stained black by its use antisepsis is not complete—when not stained black antisepsis is complete. Digitalis in doses of one drop of the tincture, and nitroglycerine or preferably erythrol tetranitrate may also be of service. In all cases the diet should be regulated and the patient placed under favorable conditions for health such as pleasant surroundings with absence of worry, depression and fear.

Decapsulation of the kidney, the doctor thinks an illogical procedure, and is mentioned only to be condemned.

NEUROLOGY.

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AND
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TRAUMATIC EPILEPSY IN ITS MEDICOLEGAL RELATIONS.

This is the title of an article by Arthur Conklin Brush in the *Journal of Nervous and Mental Diseases* for April, 1905. After discussing the various theories regarding the nature of epilepsy, the author says that it appears that the weight of evidence is in favor of epilepsy being considered as an organic disease of the cerebral cortex; and it is further alleged that this degeneration and epileptic discharge only occurs from the presence of certain unknown toxins. It would appear then—if this latter theory is accepted—that injury and disease of the cortex can produce epilepsy only in persons predisposed from the presence of the toxin. To illustrate the points in his paper, the author has collected his cases—thirty-eight in number—into three groups.

Group one—ten cases—comprises cases of epilepsy, in which—although put down in the hospital records as traumatic—careful analysis reveals the facts that the assigned cause could not be said, with any reasonable certainty, to be the real producing cause. The author shows that in the interval which lapses between the injury and the epilepsy—which varied from two to twelve years—there was no evidence of any cerebral trouble. In all of the cases the convulsions were of the *grand mal type.*

In the second class he groups those cases in which the injury to the head has produced a well-marked state of cerebral contusion, which seemed to be the only recognizable cause of the epilepsy. In all these cases the injury to the head was severe, and pronounced cerebral symptoms were produced, lasting from four hours to three days.

The third class contains those cases in which there were evidences of organic cerebral injury. In all these cases injury to the head was severe, with resulting coma, fractures of the cranium, et cetera.

In conclusion the author makes the following statement: "It will be seen that in this last group of cases there can be no question but that there was a brain injury, and that it acted as a cause; and that there was nothing in the history of these patients to suggest the existence of any other etiological factor. If such injuries to the brain can produce epilepsy, the trauma must be accepted as the sole cause; but if the theory that injury can only do so in persons predisposed by the presence of an unknown toxin in their blood, then injury can only be accepted as the exciting cause. It appears then that from a medicolegal standpoint our knowledge, as yet, will only enable us to state that certain injuries to the brain can excite epilepsy, and that the toxin theories cannot be advanced as facts until there is some evidence upon which to base such statements. And if this latter statement be true it must be shown that toxemia is present before the physician can say that the disease was the immediate and necessary result of the injury."

The reading of this article is to be commended as it is a distinct contribution to the medicolegal aspects of traumatic epilepsy. It is to be regretted, however, that the author failed to state whether any of these patients applied for damages after a resulting epilepsy. In the light of his theory regarding the disease, it would be interesting to have the opinion of the court and jury on the respective cases. I. H. N.

EDITORIAL COMMENT.

PROMISING STUDIES BEARING ON THE PROPHYLAXIS OF SYPHILIS.

THE reawakened interest in the subject of syphilis as a many-sided menace to public health, its clinical aspects, its communicability, its blighting influence on innocent victims, its transmissibility to unborn generations, its unsurpassed infant mortality and death rate of all ages directly or by complication, its contributions to asylums and the large class of degenerates, imbeciles, and incompetents who become a public charge have served to arouse greater activity among physicians and sanitarians in considering methods for restricting this great pest, and how best to promote a campaign of education of the public concerning its dangers.

Medical societies and journals are discussing the question more freely than ever before. At the recent meeting of the Michigan State Medical Society Doctor Albert E. Carrier, of Detroit, read an able paper on "Venereal Prophylaxis," and also as chairman of a committee to secure data regarding the prevalence of venereal diseases in Michigan presented a report for said committee, both of which papers received thorough discussion and unanimous opinion was expressed regarding the need for more enlightenment of the public—particularly the young—on the dangers of venereal diseases, especially of syphilis. Coincident with this moral and humane view concerning the individual and the family must be considered the effect on the state; and medical men and conservators of public health, public morals, and social science, should coöperate with this committee in its commendable work.

It is a remarkable coincidence that while this dread disease has been believed heretofore to be limited exclusively to the human race, it has been demonstrated by Metchnikoff and Roux, first in 1903, and by others since, by inoculation of chimpanzees with syphilitic virus that apes are susceptible to the infection. (Does this discovery supply any missing Darwinian link?). While these experiments have been successfully carried out, increasing our knowledge of its communicability, Schaudinn, of Berlin, has lately demonstrated the presence in syphilitic lesions of an exceedingly delicate spirillum, which he believes belongs to the protozoa, and should not be confused with ordinary spirochetæ found on the genital mucous membranes, or on the tonsils, and difficult to recognize by the usual methods. Schaudinn, with his collaborators, Hoffmann, Gorden and Neufeld, have studied twenty-six patients with primary lesions and found the spirochete pallida in every case, although in some cases they were few in number. This organism has been found in initial lesions, in mucous patches, and in the juices of lymphatic glands in both primary and secondary stages.

Metchnikoff and Roux found the spirochete pallida in eight cases of syphilis—four apes and four men—and state that owing to the present impossibilities of obtaining cultures of spirochetæ many more facts must be accumulated before pronouncing definitely, but that altogether the facts known plead strongly in favor of the theory that syphilis is a chronic *spirillose* produced by this spirochete.

Schaudinn and Hoffmann found the spirochete pallida in the splenic blood of a syphilitic the day before the appearance of the roseola. Buschke and Fischer also found it in the liver and spleen of a child that had died of congenital syphilis. During the early part of June the organism was reported found in seven primary and nine secondary lesions and in twelve typically enlarged inguinal glands.

Professor Frederick G. Novy just recently—within the past two months—demonstrated the spirochete pallida in tissue juices taken from lesions—extragenital, both primary and secondary—on a patient in the Dermatologic and Syphilitic Clinic of the hospital of the University of Michigan.

Notwithstanding the results of these investigations with both man and monkey are highly significant, still the conservative wisdom of the authors in not hastily drawing conclusions as to the etiologic position of the organism is to be commended. However, these facts give promise of further knowledge that may yet greatly aid us, not only in diagnosis and treatment, but in restriction and control of the disease, and possibly in the discovery of an antitoxin which may prevent infection or immunize those exposed to its blighting virùs.

W. F. B.

ANNOTATIONS.

THE AGE FACTOR IN HUMAN ACHIEVEMENT.

Sir James Crichton Browne does not agree with Doctor Osler that man's effective work is performed between the ages of twenty-five and forty years. In an address before the Public Health Congress recently convened in London, this well-known author of various works on mental and nervous diseases advanced the hypothesis that the natural life of man contemplates one hundred years, and declared that much of human achievement is attributable to men over forty years of age, adding that if the world were deprived of their landmarks civilization would revert to the twilight of bygone ages. In the opinion of the speaker the obligation of reaching the centenary mark should be impressed upon every urchin, as one hundred years of health and vigor are certainly attainable providing irregularities in living be avoided. In another department of this issue John F. Cargill interestingly discourses upon "The Value of Old Age," citing many examples which demonstrate the vitalizing work performed by men past the meridian of average life.

THE BACTERICIDAL ACTION OF BILE.

Edmondo Berger, in a recent contribution to the subject of bacteriology, chronicles the results of his experiments regarding the action of bile on diplococci. The potency of Fraenkel's organism is not invariably affected by the biliary secretion, and hence this test does not afford a very reliable means of differential diagnosis between the diplococci. Ox bile produces a bactericidal effect upon diplococci other than Fraenkel's, and heating does not destroy its attenuating power. Nevertheless, bile does not always produce an inhibitory action on bacteria, being for some varieties an excellent culture medium.

A MICROÖRGANISM ACCOMPANYING MEASLES.

Observations bearing on the causation of measles have recently been conducted by Agostino Borini, an Italian investigator. Cultures were made from the blood and bronchial secretion of babies afflicted with severe attacks of the disease, and a small bacillus, 0.7 microns in length, was isolated. As a culture medium gelatin did not yield satisfactory results, but agar and defibrinated blood produced thin, grayish-yellow, transparent colonies after thirty-six hours, and the growth on broth with blood was luxuriant, this medium being considered the most desirable for culture purposes. The bacillus did not stain readily with the common aniline dyes, but was not resistant to Gram's stain. Injections of fresh culture into the tracheæ of dogs produced death in from three to six days, and endopleural, endoperitoneal and splenic injections caused death without lesions, a few of the organisms being found in the blood.

STUDIES ON THE BACTERICIDAL POWER OF COPPER SALTS.

GILDERSLEEVE, after extended studies on the bactericidal action of copper on water organisms, concludes that the salts of the metal are very destructive to bacterial life. Copper sulphate works with most disastrous effect in consequence of the fact that it readily undergoes electrolytic dissociation. This salt should be employed in solutions of 1:250,000 or 1:100,000, depending, of course, upon the character of the water. Copper in colloidal solution quickly destroys certain varities of bacteria. The writer emphasizes the necessity of keeping copper vessels highly polished in order to insure the destruction of organisms, since the accumulation of foreign matter on the surfaces tends to lessen bactericidal power.

A METHOD OF TREATING WOUNDS WITH EGG MEMBRANE.

DOCTOR AMAT, of the Therapeutical Association of Paris, advocates the employment of egg membrane in the treatment of excoriated surfaces. The method consists in suitably overspreading the wound with pieces of the membrane and then covering the field with tinfoil and dry antiseptic bandages. On removal of the dressings after the lapse of several days the membrane is usually found united with the tissues and the process of cicatrization is greatly facilitated. A serious drawback to the innovation, however, is that the membrane does not invariably adhere.

APPENDICITIS AND FOOD ADULTERATION.

NOTWITHSTANDING the various theories that have been advanced regarding the causation of appendicitis, Campbell Williams has ventured to suggest that the condition may be due to the adulteration of food products with boric acid. This agent is freely employed as a preservative of milk, butter, meat, et cetera, and causes irritation of the intestinal tract, thus affording the colon bacillus opportunity to penetrate the gut and further the inflammatory process. This observer emphasizes the fact that the disease is especially prevalent in the summer months, the period during which the preservative is generally utilized.

CONTEMPORARY.

THE VALUE OF OLD AGE.

[JOHN F. CARGILL IN POPULAR SCIENCE MONTHLY.]

Do THE creative or initiatory faculties of the mind begin to wane at middle life? And would the ransacking of all historical data show that a majority of the greatest things in the world have been achieved by men under forty? To undertake anything like a positive solution of so great a problem is naturally out of the question; but one plain aspect of the matter may be shown—leaving it to the reader, or to some future writer having a passion for statistics, to determine upon which side are ranged the exceptions that prove the rule. It may be said with confidence that one fact is indisputable: We can mention no field in the broad domain of science—including astronomy, geology, biology, psychology, sociology, electromagnetism, electricity, engineering, invention, mathematics or medicine that does not owe much indeed to men of advanced years. This statement holds good of the fields also of mechanics, philosophy, statesmanship, letters, history, finance, music, art, discovery, exploration, navigation and many others.

A noteworthy beginning may be made with the five great savants who, within the hundred years just past, have given to mankind entirely new concepts, new understandings of the universe and of life; have revolutionized the greater sciences, and made it necessary to build anew from the beginning. We will take them in chronological order. Immanuel Kant died in 1804 at the age of seventy-six. His Kritik ("Critique of Pure Reason") was written, or appeared, after he had reached fifty-seven: a work of such vast comprehensiveness, such subtle, active and far-reaching intellectual resourcefulness, that the world has produced but a handful of men since his day who could fully appreciate or appraise him. His "Contest of the Faculties" appeared when he had passed seventy. His primary formulation of the nebular hypothesis was when he was in the thirties; but much of its elaboration was concluded many years afterward. Pierre de Laplace, his coadjutor in the hypothesis which shook the world, died in 1827 at the age of seventy-eight. Laplace issued the earlier portion of his great "Exposition du systême du monde" at about the age of fifty; and the completion of this monumental work containing the nebular hypothesis was not published until he was past seventy years.

The next great step forward in enlightenment is from the field of astronomy to that of geology, and we come to Sir Charles Lyell, who died in 1875 at the age of seventy-eight. The most important portions of Lyell's work were done after he had passed forty years; complete and sweeping revisions and enlargements of his earlier work were done late in life, and even down to within three days before his death, at the age of seventy-eight years, he finished a revision of his

"Principles of Geology," a work which amazed and electrified scientists of all nations, and remains today the unchallenged great text-book in that field. Lyell's is the broadest and best-balanced mind which has dealt with deep-lying geological problems. In effect, he may be said to have created the science of geology. His work marked the second epoch in the thought of mankind, supplying the needed second link in the chain of evidence of planetary evolution. He applied in geology the principle of gradual development to the earth's crust, which Laplace and Kant had previously wrought in astronomy concerning sun systems and planets; which Darwin accomplished afterward in biology for living forms and organic life, and Spencer achieved for psychology in human consciousness and thought, and for sociology in human society and government. And, moreover, the fuller amplification of Lyell's work was made after he had passed sixty years.

With Lyell's work planetary evolution came to be a recognized and definite truth; and then came Charles Darwin. Darwin was born in 1809, and lived until the age of seventy-three. His lifelong habits of thought, and his methods of research are too well known to be repeated, but it may be said that up to the age of forty-nine years he devoted himself almost wholly to accumulating stores of experience and observation, and to the planning of the great work which was to come afterward. "The Origin of Species," written at the age of fifty, sounded the farthest depth of biological knowledge and created such a whirlwind of controversy as no other book has done. His "Descent of Man," written at the age of sixty-two, was not less remarkable, and had an effect almost as widespread and profound. No man then living, either young or old, had the preparation, patience in the working out of details, breadth of mind, modesty or the honest simplicity of character, necessary to the carrying out of his tremendous task. Darwin may not have created the science of biology, but unmistakably he brought it out of a vague, confusing and conflicting state, reduced the mass of evidence and details to concrete form, and made it into an orderly and perfect system.

Herbert Spencer, the latest of this remarkable group of investigators, died in 1904, at the age of eighty-three. Spencer's mind did not begin its best functions until he was well on into the forties. He was storing up until then—his mind was incubating, as it were. At forty he had made merely a rough outline or program of his "Synthetic Philosophy," which massive work he was to carry out triumphantly in his riper and broader years. "First Principles," the first work in the series, was finished when he was forty-two years old; "Principles of Psychology" when he was fifty-two; "Principles of Sociology" when he was fifty-six, and one of the greatest in his ethics series, "Justice," came at the age of seventy-one. He was close upon eighty when his monumental "Synthetic Philosophy" was completed, and the person has not yet appeared who has discovered any diminution of his powers from the earlier work to the last page of the final volume.

The only aspect of the matter that is worth troubling about is the assertion that no creative, original or vitally important work is accomplished by men who have passed forty years. The difficulty is to make selections from the abundance of rich material at hand. We have a casual list, and one of the first names is that of an American. Benjamin Franklin was eighty-four years old when he died in 1790. His early life and achievements do not concern us, and are well known. When he was past sixty he was the chief instrumentality in the repeal of the Stamp Act; and after he had reached seventy years he was the main element of inspiration, energy and brains in the first continental congress. At this period (1776)—when he was at the head of the mission to the court of France in aid of American finance—it is said of Franklin that he was "one of the most talked-of men in the world." This mission in its all-around results to America and to the world at large has had no parallel. Its chief elements were the bringing about of an alliance between France and the colonies; and the negotiation of a loan of twenty-six million francs, obtained mainly through his own wonderful personality—it certainly was not upon any established or recognized basis of credit. This, after he was seventy years old. At the age of seventy-seven Franklin was one of three commissioners who negotiated the peace treaty with Great Britain after the revolution. Even at the age of eighty his countrymen considered his services invaluable, and refused to be deprived of them. He devised the most original, valuable, important and far-reaching feature of the constitution of the United States, namely, that which gives the states equal representation in the Senate and representation according to population in the House.

A large book could be filled with equally interesting and pertinent data concerning the achievements of men past middle life; but we may do little else than mention some of them. Christopher Columbus was fifty-six years old when he discovered America; and when he returned from his last voyage to the West Indies and South America he was sixty-eight. Magellan was forty-nine years old when he sailed away upon his globe-girdling voyage—the first man to circumnavigate the world. Baron Humboldt postponed until he reached seventy-six the crowning work of his life, finishing it ("The Kosmos") with high honor and credit. It is a work which despite certain shortcomings, inevitable on the part of any writer at that date, has been declared a successful attempt to portray the universe. Perhaps more than all else it displays the grand and comprehensive intelligence of a great man even at the age of eighty years and beyond. Goethe was eighty-three when he died. At past sixty he finished his "Theory of Colors," and he laid out for himself a completely new field of literary activities after he had reached sixty-five. He finished "Faust" at eighty, and careful criticism has long ago declared that the second part of "Faust" is the most important part of the poet's life work. Richard Wagner died at seventy. Wagner did not reach the zenith of his powers until he was fifty. The entire "Nibelungen Ring" was produced after he was sixty years old; "Parsifal" was written at sixty-four. Haydn died at seventy-seven; his oratorio, "The Creation," was written at sixty-seven years, and "The Seasons" some years later. Handel died at seventy-four. He composed "Saul" at fifty-three; his greatest work, "The Messiah," at fifty-six; "Belshazzar" at fifty-nine, and other works until he had passed seventy years. Gerome the artist died at eighty. He did not reach his greatest power until after he was forty, and much of his splendid work was done after sixty years. Verestchagin was sixty-three when he was cut off in what might be called the vigor and prime of his work by the blowing up of Admiral Makaroff's flagship a year ago. W. W. Story, the sculptor, died at seventy-six; he was a lawyer and writer of law books in early life, and did not take up sculpture until forty. In this he was eminently successful, as well as in the literary field which he continued almost to the end of his years. Lord Kelvin (Sir William Thomson) is now eighty-one. He was at the head of the department of natural philosophy at the Glasgow University until seventy-two years of age, and his work in the departments of physics and mathematics has continued to the present. After he had passed forty years he originated the mirror galvanometer, and the siphon recorder which solved one of the greatest problems in submarine telegraphy. His works upon navigation, matter, physics and geology, executed after he had passed sixty years, are among his strongest and best. Faraday died at the age of seventy-six. His discoveries of the effect of magnetism upon the polarization of light, and diamagnetism were between the years of fifty and sixty, and many important discoveries in chemistry and electromagnetism continued until late in life. Doctor O. W. Holmes entertained and delighted the world with his writings until he was eighty, and died at the age of eighty-three. John Fiske did all of his historical work after he reached forty, and the most important of his productions, both historical and philosophical, were after he passed fifty. Commodore Vanderbilt made eighty millions after he was seventy-five years old. These are but a few of the names at hand.

Coming down to the present day, and to men who are in advanced life, and living and working amongst us, we might mention our beloved Mark Twain, now seventy, who failed in business for a heavy amount at sixty years, has paid his debts to the last dollar and has retrieved his own fortunes, whose writings at three-score and ten are scarcely less amusing than those of his youth, besides being vastly more instructive. Doctor Wier Mitchell is now seventy-six, and after a life of distinguished service to the world in his profession he is still active, and in the present year is completing a work of fiction which is thought to be his best. Doctor Mitchell did not begin writing until he was past forty; since when he has published various scientific works as well as books of fiction. Andrew D. White is now seventy-three, has performed important diplomatic missions up to the age of seventy, and has contributed much to philosophy and letters since he reached sixty.

Professor Simon Newcomb, now seventy, did not begin to write until he had passed forty, was called to the chair of mathematics at Johns Hopkins University at the age of forty-nine, and his mind is still undimmed and vigorous. Professor Goldwin Smith is now eighty-two; most of his work has been done since he passed fifty years, he is yet writing, and it is still a pleasure and profit to read anything that comes from his pen. John Hay* is today, at the age of sixty-seven, with the exception perhaps of Benjamin Franklin, the greatest diplomat America has ever produced. He was appointed minister to England at the age of fifty-nine and secretary of state at sixty. J. Pierpont Morgan is now sixty-eight; his greatest achievement—the greatest industrial organization the world has ever known—the formation of the United States Steel Corporation, was long after he reached the age of sixty years, and nobody has thus far perceived any weakening of his mental powers. Andrew Carnegie is in his seventieth year; has achieved his uncounted millions since he reached fifty years, and his intellect today is sufficiently strong so that when he speaks the whole world pauses to listen.

The world's need of men of advanced years has perhaps never been so well presented as in Nathaniel S. Shaler's book, "The Individual," the main purpose of which was to present an account of what man's individual life means in the great order. In considering that valuable work it is well to bear in mind that five years ago, when it was written, Professor Shaler was in his sixtieth year, and that he is still professor of geology in Harvard University and dean of the Lawrence Scientific School.

In the chapter wherein Professor Shaler considers the question of the uses of the period of old age, he shows how the presence of three or four generations in a single social edifice gives to it far more value than is afforded by one or two. While the elders may contribute little to the direct profit of the association, they serve to unite the life of the community and bridge the gap between the successive generations. Professor Shaler shows that the average man up to the age of perhaps fifty has little or no time for calm reflection; that the necessities of existence demand that he pursue the gainful life, which is always more or less strenuous. Whatever possible period there may be for the individual to pursue the intellectual life must come afterward. And it does come. Is it necessary to argue that the world needs the assistance of the calm reflective mind? Remove this possibility, and mankind may never be able to learn whether life has either meaning or value—in the larger sense.

Recurring wars, he says, repetitions of political follies and the successions of commercial disasters, all show the need of adding in every possible way to the strength of the bond between generations, so that the life of society may gain a larger unit of action than is afforded by the experience of most of its active members. If the deeds

*This article was in type before the lamented death of John Hay.

of any single period could be the result of the experience of three or four generations of experienced men, rather than that of one, civilization would be an immense gainer. There would be fewer recitals of failure, fewer reversions toward savagery. This necessity is made evident, he says, because, notwithstanding the resources of our printed records, they convey only imperfectly the quality of one time to that which succeeds it. The real presence of the generations is necessary to the greatest extent that can be had.

He says that the idea of the apparent uselessness of man in advanced years is a survival from the time when a man's value in warfare was the paramount consideration; and he adds, "The generation which has seen an aged Gladstone guide an empire; a von Moltke at the three score limit beat down France; and a Bismarck at more than three score readjust the Powers of Europe, has naturally enough given up the notion that a seat by the chimneyside is the only place for the elders."

MEDICAL NEWS.

THE NEW DEAN OF THE UNIVERSITY OF MICHIGAN PHARMACY DEPARTMENT.

Julius Otto Schlotterbeck, Ph. C., Ph. D.

Doctor Julius Otto Schlotterbeck has been appointed to succeed the late Professor Albert Benjamin Prescott as Dean of the Department of Pharmacy of the University of Michigan. This honor of the Board of Regents, conferred on so young a man, would seem to indicate the possession of unusual administrative and scientific ability, and this the Board has had ample opportunity to observe during the seventeen years that he has been identified with the teaching force of the department. Doctor Schlotterbeck began his pharmaceutic career as a drugstore boy in Ann Arbor, the city of his birth. After acquiring a thorough knowledge of the business side of his chosen calling he entered the School of Pharmacy in 1885 and received the degree of Pharmaceutical Chemist in 1887. He pursued the practice of his profession for about a year, when he resigned his position to accept an appointment as instructor in pharmacognosy and materia medica at his alma mater.

While performing his duties as teacher he elected study in the literary department and received the degree of Bachelor of Science (in chemistry) in 1891. Four years later he was granted leave of absence to pursue study in Europe, and spent a year under Tschirch and Fischer at the University of Berne in Switzerland, from which institution he obtained the degree of Doctor of Philosophy in 1896, and in recognition of his superior scholarship was awarded in addition thereto the *summa cum laude*, the greatest distinction conferred by this University, and one rarely achieved by a foreign student. Shortly afterward he became the recipient of the First Award of the Flückiger Memorial Fund for scientific investigation. He returned to the University of Michigan in the autumn of 1896, where he resumed work with the rank of Assistant Professor of Pharmacognosy. In 1904 he was promoted to the Junior Professorship of this subject, and was likewise appointed Secretary of the Faculty. As a teacher Doctor Schlotterbeck commands the enthusiastic admiration of his students. His lectures are lucid and complete presentations of a subject over which he has attained mastery. As an investigator he enjoys the reputation of delving deep into his chosen branch of science, and his contributions afford valuable acquisitions to pharmaceutic research.

THE PASSING OF A DISTINGUISHED PHYSICIAN.

Professor Hermann Nothnagel, of Vienna, eminent physician, medical clinician, and noted author, is dead, aged sixty-four years. The doctor retired on the night of July 6, after having attended to his daily round of professional duties, his last call engaging him until about 10:30 o'clock, and on the morning of July 7 his lifeless body was found in bed, death being attributable to arteriosclerosis. A short time before his demise he wrote a letter to his clinical assistant giving exact notes concerning the course of his illness. Doctor Nothnagel was born in the Province of Brandenburg, September 28, 1841. He was the son of a physician, and afterward became one of a group of great men who won world-wide fame for the Vienna School of Medicine. Traube and Virchow are credited with exerting much influence on his early development. He was appointed assistant to Leyden after leaving the Friedrich Wilhelm

Professor Hermann Nothnagel

Institute in 1865, and became Privat-docent in internal medicine at Königsburg in 1866. At this stage of his career a number of years were spent in the army and in lecturing on medicine, and in 1872 he received the appointment of professor of medicine and pharmacology at Baden. He acceded to the professorship of clinical medicine at Jena in 1874, a position he held until 1882, since which time he has been identified with the University of Vienna in the same capacity. Doctor Nothnagel stood high in the estimation of the public as a man as well as a physician, and had many honors conferred upon him, one being membership in the Austrian House of Lords, where he represented his constituency since 1902. He was a teacher who quickly acquired fame and eventually became one of Europe's most distinguished clinicians. As an author, his monumental work, "System of Medicine," which was nearing completion at the time of his death, bespeaks his ability in the literary field. As a physician, he enjoyed an immense practice, and is reported as saying that he had felt the pulses of eight hundred thousand persons. His loss will be keenly felt in the medical world, as well as that of Mikulicz, Wernicke, Wood, Dudley and other luminaries who have recently crossed the portals of eternity in such close succession that "the air is full of farewells to the dying and mournings for the dead."

ORIGIN OF THE FIRST MEDICAL SCHOOL IN AMERICA.

Doctor Charles W. Dulles, Lecturer on the History of Medicine in the University of Pennsylvania, is the author of an interesting paper on the "Origin of the University of Pennsylvania," which was recently published in the *Medical Bulletin* of that institution. The College of Philadelphia, which had its inception in 1749, has generally been regarded as the foundation of the University, but Dulles has traced its origin to the Charity School, which was founded in 1740, by a number of persons, unbiased by sectarian feeling, who had been united in common interest through the efforts of Reverend George Whitefield, who thought the time opportune to supply educational facilities for the poor, and accommodation for public worship exceeding that of any church building in the town. Benjamin Franklin was one of the trustees of this institution, the first building of which was completed September 15, 1740, and used for public services three weeks later. It was declared that "the house is intended for public worship and a charity school." Through the influence of Franklin, who had previously effected an organization looking to the founding of an academy, the trustees of the Charity School presented to the trustees of the proposed academy, a proposition for the transfer of the property of the Charity School to the trustees of the Academy. The proposition was accepted and the consolidation was known as the Academy and Charity School, which advanced rapidly in public favor. A few years later the Academy and Charity School became the University of Pennsylvania. Judge Pennypacker, now Governor of Pennsylvania, has issued a brief to prove that the date of the foundation of the University was 1740. In this argument the contention is maintained that the origin of an institution dates from that movement, "which being continued constitutes an essential part of an organization," and adds that "the movement set on foot in 1740 to establish a Charity School in Philadelphia, being taken up and carried to completion by the projectors of the Academy, which in turn developed into the University of Pennsylvania, is the oldest integral part of the University. The medical department, the first medical school in America, was established in 1765, chiefly through the efforts of Doctor John Morgan.

THE FOOTHOLD OBTAINED BY YELLOW FEVER.

New Orleans has been experiencing an epidemic of yellow fever. The first case occurred about July 13, and within two weeks two hundred eighty-three cases had been reported. Statistics bearing on the progress of the scourge to 6 o'clock P. M., on Saturday, August 5, show that five hundred five cases had been recorded, and that this number yielded a mortality of ninety-seven, eight succumbing on that day. Thirty new cases and sixteen new foci were included in the report, the latter swelling the total foci of infection to ninety-one. The stegomyia fasciata mosquito is considered responsible for the deplorable condition, and hence the mosquito theory of yellow fever constitutes the basis upon which the disease is being combated. The city is undergoing thorough cleaning, and mosquito larvæ are being destroyed by petroleum, which is freely utilized in oiling gutters and cisterns. With the exception of the Mississippi episode, quarantine was established with comparative absence of panic. The situation is now under control of the Public Health and Marine Hospital Service, with Surgeon White in charge.

MINOR INTELLIGENCE.

Doctor A. P. Ohlmacher has been appointed Director of the Biologic Laboratories of Frederick Stearns & Company, of Detroit, Michigan, and has entered upon the active duties of the position.

The University of London has added a School of Tropical Medicine to its departments. Mr. Joseph Chamberlain was influencial in establishing this school when he was Secretary of State for the Colonies.

The American Academy of Otology and Otolaryngology will convene in Buffalo, New York, Wednesday, August 23, 1905, and continue its sessions for three days. Doctor George F. Suker, of Akron, Ohio, is secretary.

Roosevelt Hospital, of New York City, is to be enlarged by the addition of an annex, which is to cost $15,000. The new wing will be seventy-eight feet long and twenty-four feet wide, and will be utilized mainly for dormitories and a kitchen.

ALLYPINE, a new anesthetic having all the virtues of cocain without its secondary effects, is announced as the discovery of two German scientists. The new agent is nonpoisonous and produces anesthesia by local application.

DOCTOR LOUIS JAMES WOLF, of the Bellevue Hospital Dispensary, accompanied the Peary Arctic Expedition as surgeon. The surgeon who had engaged to serve the explorers unexpectedly resigned, and forthwith three hundred applications were filed for the vacancy.

THE University of Iowa has inaugurated an innovation in the form of a Lectureship on Tuberculosis for the department of medicine and surgery. Doctor J. W. Kime, superintendent of the Boulder Lodge Sanatorium for Tuberculosis, has been appointed to deliver the lectures.

THE new Saint Ann's Foundling Asylum, of Saint Louis, which was erected at a cost of $250,000, has just been occupied. The institution is said to be the first of its kind in the country and was founded by the Sisters of Saint Vincent de Paul in 1852, since which time over eighteen thousand infants have received succor.

THE dental congress was a late feature of the Lewis and Clark Exposition at Portland. A four days' session began on July 18 with an attendance of over three hundred dental surgeons. Fifteen states sent delegates, eight western states being largely represented. Dentists were also present from Singapore, Honolulu, Canada, New Zealand and Alaska.

IT is reported that the members of the original faculty of Johns Hopkins—Doctors William H. Welch, William S. Halstead, Howard A. Kelly and William Osler—met in London during June, and sat for a group picture, which will be painted by Mr. John S. Sargent. The idea originated with Miss Mary E. Garrett, benefactress of Johns Hopkins Medical School, at whose expense the painting will be executed.

THE Island of Penikese, near New Bedford, Massachusetts, is being considered as a possible location for a leper colony. The State Board of Charities, which has visited the island on several occasions, regards the site as very desirable. A position on the mainland near Brewster, Cape Cod, had been quite seriously considered by the board, but on account of the indignant attitude assumed by residents in the vicinity this location was not chosen.

THE new scarlet fever pavilion connected with the Kingston Avenue Hospital, New York, was opened recently for public inspection. The structure is 188 feet long, and affords accommodation for eighty patients, besides being equipped with sun parlors at either end for convalescents. The furnishings are of antiseptic pattern and the rooms are constructed without angles. The building is absolutely fire-proof and has direct fire alarm connections. The authorities contemplate the establishment of a home for the nurses employed at the institution.

Doctor Arthur R. Reynolds, Health Commissioner of Chicago until the advent of the Dunne administration, has been appointed resident physician and director of Thomas Taggert's Hotel at French Lick Springs, Indiana.

More than eight hundred cases of heat prostration have occurred in Italy thus far this summer. The heat in that country has been especially intense, the thermometer in front of Saint Peter's at Rome registering 109° in the shade.

The land immediately adjoining the Harvard Medical School buildings has been purchased by the corporation as a site for the proposed new dental building. The plans for the structure have already been drafted, and efforts are being exerted to procure sufficient funds for its erection.

Twelve prizes aggregating twenty-seven thousand marks will be awarded by the Internationales Arbeitsamt of Basle, Switzerland, for the most practical papers on lead poisoning and the means of preventing its occurrence among industrial employes. The essays must be presented before December 31, 1905.

Doctor Walter P. Manton, of Detroit, was Secretary of the Section on Gynecology and Obstetrics at the Portland meeting of the American Medical Association. Doctor Vida A. Latham, of Chicago, formerly assistant in the Pathological Laboratory of the University of Michigan, was Chairman of the Section on Stomatology.

The second French Congress of Climatology and Urban Hygiene was held recently at Arcachon and Pau, and was largely attended. Sessions were held in the two cities, a special train conveying the members from one to the other. The report on seaside sanatoria for children and adults in France was presented by Doctor H. Barbier, and the disinfecting and drainage systems at Arcachon were also discussed.

Boston is to have a new emergency hospital in the eastern section of the city. The late Ann E. Taggard bequeathed about $11,000 for hospital purposes in the East Boston district, and this amount has just been augmented by unanimous vote of both branches of the city council which appropriated $30,000. Mayor Collins has affixed his signature to the enactment, and the hospital will be built under the supervision of the trustees of the City Hospital.

Inscribing the word "Fakir" upon the chest of a Jewish immigrant was deemed sufficient cause for the recent suspension of a young interne from Bellevue Hospital. The Hebrew had received occasional treatment at the hospital for chest pains, and on the day of his last visit the thermocautery was employed. A fellow-interne who entered the room at this juncture exclaimed, "That man is a fakir," and the jocose attendant confessed that the sobriquet impressed him so ludicrously that he unwittingly moved the point so that the letters were burned into the flesh of the patient.

To insure better sanitary conditions in Panama, the chief sanitary officer of the Canal Zone has divided the city into eight districts, and has ordered that physicians shall report all cases of yellow fever under treatment. As a preventive measure, all the houses in Panama are being fumigated.

THE sixteenth annual meeting of the Baltimore and Ohio Association of Railway Surgeons was held recently in Pittsburg, and covered a period of three days. More than one hundred fifty delegates were in attendance, and the meeting was a very successful affair. The primary object of the organization is to consider the best means of providing first aid to injured persons.

THE Maryland mosquito is pronounced preëminent as regards size and ferocity by the scientific department of Johns Hopkins University, which has for several months been investigating the pestiferous gnat, its haunts and its habits. Maryland not only produces the largest mosquitoes in the country, but likewise yields specimens of almost every variety, including the malaria-breeding species.

THE Board of Visitors of the University of Virginia recently appointed Doctor Richard H. Whitehead, of the University of North Carolina, Professor of Anatomy—vice Doctor William G. Christian, resigned—and Dean of the medical department. The Chair of Obstetrics, Gynecology, Surgical Diseases, and Abdominal Surgery, which was until recently held by Doctor A. Harper Buckmaster, will be filled at the next meeting of the board.

DOCTOR STUART MCGUIRE has been appointed President of the University College of Medicine of Virginia, vice Doctor J. Allison Hodges, resigned. The appointee is well known to the profession throughout the country as the son of the late Doctor Hunter McGuire. He was educated at the University of Virginia, is about thirty-eight years of age, and enjoys the reputation of being a skillful surgeon. At the death of his father he assumed charge of the private hospital (Saint Luke's), which had been conducted by the former and has since devoted his entire time to surgery.

DOCTOR J. CHALMERS DACOSTA, of Philadelphia, and a corps of special assistants have about completed the task of revising "Gray's Anatomy," and a new edition will be issued forthwith. Two years have been devoted to the revision and the work has been so thorough and searching as to require resetting of the entire book in new type. More than four hundred new and elaborate engravings in black and colors will comprise an important acquisition. As an instance of the many changes that have been instituted, the section on Embryology and Histology that has heretofore been inserted at the end of the work on anatomy proper will henceforth be distributed throughout the new edition in the form of embryological, histological, and biological references bearing directly on the subject under consideration, thus greatly facilitating access and understanding.

Two hundred fifty thousand dollars have been appropriated by the New York City Board of Estimates, for the construction of buildings for the tuberculosis hospital. The site is located at a distance of seventy-seven miles from the city on an elevation of one thousand two hundred fifty feet above sea level. Pending completion of the permanent structures, farm houses and cottages already on the grounds will be utilized for the immediate reception of patients.

THE report of the investigations of Doctor Millener, of Buffalo, and the presentation of nineteen cases under his charge, tend to show that the continued employment of men in electrical power stations is injurious to health. Incidental to the immediate presence of high voltage, the chemic influence of either the electric ray or possibly of some ray as yet undiscovered, gives rise to loss of appetite, digestive disturbances, distress after eating, and a whitening of the complexion to almost the color of chalk.

CEREMONIES incident to the laying of the corner stone of the new Michael Reese Hospital were conducted in Chicago on July 4, Governor Deneen being present and delivering the address of the occasion. The plans for the hospital entail an expenditure of approximately $500,000, and the buildings will be ready for occupancy in May, 1906. The institution proper will be six stories in height, and will be equipped with the most modern heating, lighting and ventilating systems. There will be three operating rooms and special provision will be made for isolating surgical, medical, gynecological and maternity cases. The children's department for both pay and charity cases will be separate from the main buildings.

THE Saint Louis Skin and Cancer Hospital recently opened its doors for the reception of patients. This institution, situated on the southeast corner of Jefferson and Saint Charles, consists of a completely equipped hospital of forty beds and an out-patient or dispensary service. As the title indicates, only skin and cancerous diseases will be treated. The institution is founded upon the research idea for cancer and allied types of malignant diseases. A pathologist, who will devote all of his time to the needs of the hospital, has been appointed, and he will conduct such scientific investigations as the opportunities of the hospital and clinic will permit. The medical staff of the institution will also especially direct their efforts to scientific endeavor. A training school for nurses, partaking of the character of a postgraduate school, has been established in connection with the hospital. Daily clinics for out-patients will be held. The institution is to be free of charge to all patients enjoying its benefits. Inoperable and incurable cancer cases, as well as the operable ones, will be admitted to the hospital. In the near future, however, a home, situated somewhere in the suburbs of the city, will probably be established as an annex for the former cases. The medical staff comprises about twenty physicians and surgeons.

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ORIGINAL ARTICLES.

MEMOIRS.

SOME NEW POINTS OF LEAST RESISTANCE IN THE CONSUMPTION-DIATHESIS.*

By THOMAS J. MAYS, A. M., M. D., Philadelphia, Pennsylvania.

Notwithstanding the great increase in the sum-total of human health and longevity during recent years, it does not require much proof to demonstrate that the perfectly healthy individual is as yet a quixotic conception. The truth is that health is after all only a relative term, and that amid our many propitious and unpropitious influences of all sorts, every person bears some flaw, either slight or serious, as evidence that the effects of the latter have not yet been entirely eliminated from our physical existence. These flaws, or points of least resistance, as they may be called, are beacon lights which indicate the particular group of chronic diseases to which every one, in a condition of health is, perhaps, potentially drifting, and which, if properly interpreted, point out appropriate measures for prevention and therapeutic relief. To flaws of this character developing in the consumption-diathesis I now invite your attention. I am moved to this principally on account of a recent article published in *Virchow's Archiv* (Volume CLXXV, page 185), by Professor G. von Bunge, on "Alcoholism and Degeneration," and secondarily on account of my own observations on the vagus reflex, both of which point in the same direction.

Professor von Bunge observed that chronic alcoholicism in parents contributed to an increasing incapacity of mothers to suckle[1] their infants, and in order to confirm, or to disprove this impression, he issued a large number of inquiry-blanks to the profession of Europe on which he invited information on these questions. His returns were quite extensive, which he divides into two classes (1) The "capables," who are able, and (2) the "incapables" who are unable to nurse their offspring. He received full information concerning four hundred twenty-two "capables," and seven hundred sixteen "incapables." In the former number both daughters and mothers were "capables," but among the latter there were two hundred eighty-one cases (39.2 per cent) in which the mothers were "capable," and the daughters "incapable," and four hundred thirty-five (60.8 per cent) in which both mothers and daughters were "incapables." He groups them as follows:

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*Read by title at the Detroit meeting of the American Climatological Association, June 28, 1905.

[1] While this part of his investigation does not specifically relate to the subject in hand it is important because it shows the baneful effects of alcohol on the function of lactation.

Table A.—Group I.

422 CASES—BOTH MOTHERS AND DAUGHTERS "CAPABLE."

ALCOHOL CONSUMED	Daughters. Per cent of Cases	Mothers. Per cent of Cases	Fathers. Per cent of Cases
Abstemious, not habitual	69·9	75·3	52·3
Moderate, habitual	28.8	23·6	38.1
Immoderate, habitual	0.8	0.8	6.9
Excessive	0·5	0·3	2.6

Table B.—Group II.

281 CASES—MOTHERS "CAPABLES" AND DAUGHTERS "INCAPABLES."

ALCOHOL CONSUMED	Daughters. Per cent of Cases	Mothers. Per cent of Cases	Fathers. Per cent of Cases
Abstemious, not habitual	49·6	56·7	11·1
Moderate, habitual	45·2	40·5	11·1
Immoderate, habitual	4·4	1·9	35·7
Excessive	0·9	1·0	42·2

In comparing the two groups the influence of alcoholism in the father is well shown in producing incapacity in the daughter, as follows:

ALCOHOL CONSUMED BY FATHER	Mother and Daughter both Capables. Per cent of Cases. (Group I)	Mother Capable, Daughter Incapable. Per cent of Cases. (Group II)
Abstemious, not habitual	52·3	11·1
Moderate, habitual	38·1	11·1
Immoderate, habitual	6·9	35·7
Excessive	2·6	42·2

In this comparative table the influence of the amount of alcohol consumed by the father in producing incapacity to suckle in the daughter is quite obvious. In the first group he was abstemious in 90.4 per cent, and used it to excess only in 2.6 per cent of the cases; while in the second group he was abstemious and moderate in only 22.2 per cent, and abused it in 77.9 per cent of the cases.

Table C.—Group III.

435 CASES—MOTHERS AND DAUGHTERS BOTH "INCAPABLE."

ALCOHOL CONSUMED	Daughters. Per cent of Cases	Mothers. Per cent of Cases	Fathers. Per cent of Cases
Abstemious, not habitual	39·2	32·5	13·1
Moderate, habitual	57·2	64·0	56·3
Immoderate, habitual	2·7	1·0	11·6
Excessive	0·9	2·5	19·1

While it is true that in Group III the fathers consumed much less alcohol than in Group II, it will be seen that the mothers and daughters of this group are less abstemious and used it to greater excess than they did, in either Group I or II, and this increase of alcohol consumption in the mothers and daughters added to that of the fathers is the influence which brings about the incapacity of the former to suckle their infants in this group.

Now comes the most interesting portion of this investigation when viewed from the standpoint of the consumption-diathesis. In this connection Professor von Bunge considers the prevalence of consumption, nervous diseases and psychoses among the fathers, mothers, daughters, and the sisters and brothers of the last, in relation to the alcohol habit in the foregoing Groups I, II, and III.

Table D.—Group I.

In which the fathers, mothers and daughters were on the whole abstemious.

422 CASES—MOTHERS AND DAUGHTERS "CAPABLES."

CHRONIC DISEASES	Fathers. Per cent of Cases	Mothers. Per cent of Cases	Daughters. Per cent of Cases	Sisters and Bros. of Daughters. Per cent of Cases
Consumption	3·3	2.8	1.6	8·9
Nervous diseases and psychoses	0·5	1·7	1.6	3·0

Table E.—Group II.

In which the fathers used alcohol to excess in 79 per cent of the cases.

281 CASES—MOTHERS "CAPABLES," DAUGHTERS "INCAPABLES."

CHRONIC DISEASES	Fathers. Per cent of Cases	Mothers. Per cent of Cases	Daughters. Per cent of Cases	Sisters and Bros. of Daughters. Per cent of Cases
Consumption	7·7	5·5	7·0	21·3
Nervous diseases and psychoses	3·4	5·5	10·7	9·3

Table F.—Group III.

In which the fathers, mothers and daughters used alcohol to a greater extent than in Group I and II.

435 CASES—MOTHERS AND DAUGHTERS "INCAPABLES."

CHRONIC DISEASES	Fathers. Per cent of Cases	Mothers. Per cent of Cases	Daughters. Per cent of Cases	Sisters and Bros. of Daughters. Per cent of Cases
Consumption	16.2	18.2	16.5	27.8
Nervous diseases and psychoses	12.6	18.5	25.9	18.6

Taking Group I as a standard of the normal prevalence of consumption, nervous diseases and psychoses among the various members of these families, and compare Groups II and III in these respects with it, we find that consumption predominates in round numbers from two to four hundred per cent in Group II, and from three hundred to one thousand per cent in Group III over Group I; and that nervous diseases and psychoses prevail from three to six hundred per cent in Group II, and from three to fifteen hundred per cent in Group III over those in Group I.

That the increase of these chronic diseases is largely due to the abuse of alcohol by the fathers of these families is shown by the following tables in which definite information was obtained concerning the alcohol habits of the fathers and also of the occurrence of consumption, nervous diseases and psychoses among their children.

Table G.—Group IV.

ALCOHOL-CONSUMPTION OF FATHERS	Number of Cases	Consumption in Fathers. Per cent of Cases	Consumption in Children. Per cent of Cases	Nervous diseases and psychoses in fathers. Per cent of Cases	Nervous diseases and psychoses in children. Per cent of Cases
Abstemious, not habitual	188	4.3	14.8	1.1	7.9
Moderate, habitual	240	5.8	14.0	2.5	13.6
Immoderate, habitual	128	10.2	22.1	2.3	17.2
Excessive	103	13.6	29.3	2.9	24.2

The above table demonstrates clearly that alcoholism in the father causes consumption, nervous diseases and psychoses in the offspring. But the real pernicious effect of alcohol in this direction is not fully shown here, because in a certain number of instances the fathers themselves were sufferers from these diseases—which complicates the question somewhat. For this reason Professor von Bunge constructed the following table of cases, in which neither the father nor the mother were affected with these diseases and in which precise information concerning the amount of alcohol consumed by the father up to the time of the conception of the children had been obtained.

Table H.—Group V.

ALCOHOL-CONSUMPTION OF FATHER	Number of Cases	Consumption in children. Per cent of Cases	Nervous diseases and psychoses in children. Per cent of Cases
Abstemious, not habitual	149	8.7	4.0
Moderate, habitual	169	10.7	6.5
Immoderate, habitual	67	16.4	6.0
Excessive	60	21.7	25.0

Table H, therefore, sets forth the fact much more accurately than Table G, that the children of alcoholic fathers are from two hundred to two hundred sixty per cent more liable to consumption, and from three hundred to six hundred per cent more prone to nervous diseases and psychoses than those of abstemious fathers.

This, then, being one new point of least resistance in the consumption-diathesis, another one is the vagus reflex as a sign in the active and potential consumption-diathesis, the data of which I contributed to the *New York Medical Journal* for September 3, 1904. This reflex, which is principally a sensory reflex of the vagus, is developed by gently pressing this nerve in the region of the neck backwards and inwards against the hard part below, and if it is present the person will experience pain at that point, which may be accompanied by cough, dyspnea, dizziness, pain in chest, shoulders, et cetera.

This contribution consists of a study of the vagus reflex in three hundred eighty individuals, one hundred thirty-eight of which were consumptives, and in ninety-seven per cent of these the reflex and the pulmonary affections were found on the same side, and in three per cent on opposite sides—thus being present in every case of consumption. The rest, or two hundred forty-two persons, were healthy, and of these one hundred seventeen showed either a vagus reflex or a family history of pulmonary consumption. In ninety-four, or eighty per cent of the one hundred seventeen individuals the vagus reflex and a family history of consumption coexisted in the same person; in fourteen, or 12.38 per cent, a family history of consumption (which was rather remote in four) was not accompanied by a vagus reflex; and in nine, or 7.96 per cent (three of which had an alcoholic and two an insane ancestry), the vagus reflex was present without a family history of consumption. In the remaining one hundred twenty-five, or about fifty per cent of these (two hundred forty-two) there was complete absence of a family history of consumption and vagus reflex.

From this investigation the following conclusions are drawn:

(1) That the vagus reflex is always present in pulmonary consumption.

(2) The vagus reflex is present in about eighty per cent of healthy people who have a family history of consumption.

(3) That in healthy persons without a family history of consumption the vagus reflex is universally absent, provided there is no family or personal taint of alcoholism, insanity, or other neuroses.

(4) That in the development of the vagus reflex, dizziness, dyspnea, coughing, sweating are produced.

(5) That the intensity of the vagus reflex, or, in others words, the number of symptoms that accompany its development, other than those which manifest themselves locally in the neck, seems to be dependent on the number of consumptive deaths that have occurred in the immediate family.

(6) That the vagus reflex, by projecting the family history of the potential consumptive into the present, not only becomes a valuable sign in the diagnosis and prognosis of pulmonary consumption, but foreshadows that which is not otherwise evident to the senses, and thus also becomes an important factor in the prophylaxis and treatment of this disease.

SKIAGRAPHY OF THE STOMACH AND INTESTINES.

By HENRY HULST, A. M., M. D., Grand Rapids, Michigan.

The study of the functions and affections of the stomach and intestines has developed of late at such a rate as to make it difficult for the general practitioner to keep track of all the advances as they are made, but if there is any truth in Stockton's[1] estimate that fifty per cent of all civilized women of all classes of life have developed the condition known as enteroptosis, it is evident that the general practitioner least of all can afford to ignore the subject. Glenard[2] thinks that chronic constipation is chiefly due to displacements of the stomach and intestines. The gynecologist W. Gill Wylie finds that "patients have been treated indefinitely with pessaries for falling of the womb" when the real cause was an unrecognized enteroptosis. "If," as he continues, "this condition more than any other cause is responsible for the constipation, backache, debility, biliousness, early loss of complexion, headache, and that long list of ailments of which so many women in all civilized countries are victims"[3] its early recognition and the positive determination of its degree of severity become matters of the greatest importance to every general practitioner as well as to the specialist.

It is not easy to outline the stomach and intestines by ordinary methods. Transillumination by means of a small electric lamp within the stomach is useful, but inaccurate, not always feasible, and unsafe in cases of cancer and ulcer. A previous ingestion of some fluorescing solution may intensify the light reflex when the light is turned on in the stomach but does not seem to increase much the accuracy of the method. Percussion of a stomach inflated with carbonic acid gas is likewise unsatisfactory, not very accurate, and unsafe under some conditions. Recently Knapp[4] has recommended that the patient swallow a glass of ice water, when the region of cold will indicate in a rough way the location of the stomach. All of these devices fail to show the position of the intestines. In view of the crudeness of the foregoing methods it may seem strange to those not familiar with the difficulties of Roentgen ray diagnosis that, as Hemmeter points out, "The Roentgen rays have offered no decided aid for the diagnosis of intestinal disease."[5] Not but that several more or less ingenious methods have been suggested by various writers, as by Robson and Moynihan in their "Surgical Treatment of Diseases of the Stomach,"[6] where occurs the following: "With regard to the Roentgen rays we have found both the screen and the skiagram of use in demonstrating the position of impacted coins, metallic anastomosis-buttons and other foreign bodies. The Roentgen rays have also been suggested for localizing the position and size of the pyloric orifice after letting the patient swallow balls of different sizes made of bismuth subnitrate or carbonate coated with keratin, which will be only temporarily arrested at the pylorus if it be patent and the keratin covering of which will be dissolved on reaching the intestines, keratin not being soluble in the gastric juice." This has been sometimes done to advantage, but such cases are rare, whereas enteroptosis is very common, and on the latter condition a skiagraph taken by this method will throw little or no light.

Reed ("Diseases of the Stomach and Intestines," page 102) comes nearer to a practical solution of the difficulty. He says: "In the case of a patient with thin abdominal walls a powerful apparatus in the hands of an expert will often produce a radiograph in which the outlines of the stomach can be clearly made out, provided a solution containing one dram of bismuth has been administered to the patient twice or thrice a day, some time before meals, for two days preceding."

This is apparently based upon the theory that the bismuth accumulates in the organ, a theory not borne out by experience. This method does not seem to have been practiced to any considerable extent and is probably intended as a suggestion. In fact, very little actual work of any kind seems to have been done by any one to make the x-rays practical in this field. Williams[7] made several fluoroscopic examinations of the stomach as long ago as eight years, and was able to say, in 1901, "I think that sufficient has been done to show that they can be of assistance to us, and that their aid in this field is capable of further development."

The reasons why the Roentgen rays have not proved very satisfactory in this work are not far to seek. The fluoroscope is less adequate than the photographic plate and is less in vogue than it used to be. On account of peristalsis, long exposures defeat their own purpose and short exposures Williams, who might have been expected to pursue this subject to a practical end, was unable to make because of his use of the static machine. This further development of method we owe to Professor H. Rieder, whose "Beiträge zur Topographie des Magen-Darmkanales beim lebenden Menschen nebst Untersuchungen über," et cetera[8] is as epoch-making in Roentgenology as was his introduction of instantaneous skiagraphy of the soft contents of the chest. There is nothing about his method that is entirely new, unless it be the shortness of exposure. The further development, then, consists in the application of the short exposure method to eliminate the blurring caused by peristalsis and respiration.

My own experience in skiagraphy of the stomach and intestines is limited to twenty-two cases, but these have been amply sufficient to demonstrate the value of the method. Half-tone illustrations cannot do justice to negatives and cannot give an adequate idea of what skiagraphy of the alimentary tract can accomplish (for that purpose the negatives should be viewed by means of a show-box, against a ground glass lighted up by electricity); but even half-tone reproductions will show something of the results obtained. Only a few are presented with the present article.

One ounce of bismuth subnitrate, Merck, is suspended in one quart of milk and eaten slowly with or without bread. It is important that the bismuth be free from arsenic when such large quantities are given. The first skiagraph is taken immediately or soon after the bismuth meal. In four and one-half to six hours the normal stomach passes the bismuth on if no food is taken meanwhile. The second skiagraph should be taken in about six hours and no food allowed between. If food is taken the remaining bismuth, getting mixed with it, is kept in the stomach that much longer. Twelve to forty-eight hours after the meal is the best time to obtain a good picture of the colon, the length of time seeming to be in direct proportion to the degree of constipation present.

The anticathode should be accurately centered over the part of the spine directly opposite the umbilicus. The latter, if desired, may be indicated on the plate by sticking a penny on the navel. The distance of the anticathode from the plate should be the same in all pictures, say twenty inches. By observing these two precautions the data obtained from the resulting skiagraphs can serve as a basis for comparison, although they have no orthodiagramatic value. Until recently I have placed the subject face downward, with the plate underneath him. Case Number XV demonstrates the faultiness of the prone position. For the remaining cases I constructed a chair combining plateholder, diaphragm and tube in such a manner as to facilitate skiagraphy of chest and abdomen in sitting posture. To get a good view of the pelvis as well it is necessary to skiagraph the subject standing up. The patient not being exceedingly corpulent, the exposure with a Walter six tube at twenty inches and a good diaphragm, can be made easily in ten seconds and in even considerably less time, with ten to twenty milliamperes going through the tube. Other things being equal, the shorter the exposure the better, on account of peristalsis. Thus far I have never resorted to rectal injection of bismuth because I have nearly always succeeded in getting a view of the colon by the stomach method. In hospital work especially it will be a simple matter to give an enema of three ounces of bismuth in one quart of milk or even water.

NOTES OF CASES.

Case I. (Figure I).—John M., age sixteen. Swallowed nine capsules of bismuth subnitrate, twelve grains each. A skiagraph taken immediately afterwards showed them all. Two of them, on account of his prone position, were arrested in the stomach before reaching the other seven. A skiagraph taken immediately after the former showed that one of the capsules had broken down and permitted the bismuth to escape. A third skiagraph taken thirteen hours after the ingestion of the capsules showed the bismuth in the cecum and colon, but not very plainly.

Case II.—John M., same subject as *Case I.* Normal.

(*a*) Bismuth meal at noon, April 3. Skiagraph taken immediately after meal showed stomach on left of vertebral column. Lowest border of greater curvature opposite cartilage between third and fourth lumbar vertebræ. Lowest point of lesser curvature opposite middle of second lumbar vertebra.

(*b*) Five hours later second skiagraph showed stomach empty, some bismuth in a few loops in the pelvis and the cecum beginning to get filled.

(*c*) Fifteen hours after the meal a skiagraph revealed cecum, transverse colon crossing over from the top of the right ilium across the body of the fourth lumbar vertebra to the top of the left ilium, then straight upwards as far as a line crossing the vertebral column at right angles between second and third lumbar vertebræ, and downwards from the level of the left ilium into pelvis. Transverse colon slightly curved with its convexity downwards.

(*d*) Twenty-four hours after bismuth meal the cecum, descending colon and sigmoid flexure still contain bismuth. Transverse colon empty for the greater part.

Case III.—Doctor H., suffering with constipation and gastric trouble of four years' standing; neurasthenia.

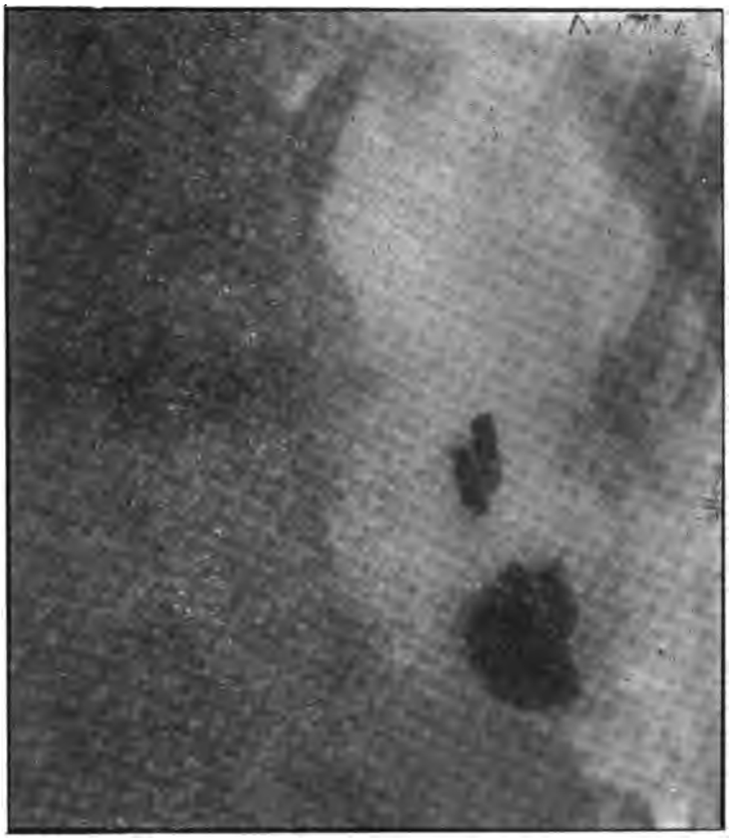

FIGURE I.

(*a*) Skiagraph taken immediately after bismuth meal, April 5, 1905. Stomach on left side and anterior to spinal column. Lowest point of greater curvature opposite third lumbar intervertebral cartilage. Lowest point of lesser curvature opposite second lumbar cartilage. Pyloric end one-half inch to the right of the body of the third lumbar vertebra.

(*b*) Taken four and three-quarter hours after (*a*) showed stomach empty and bismuth beginning to show in cecum. Motor function of stomach not diminished.

(*c*) Taken twenty-four hours after bismuth meal. Cecum and ascending colon visible up to costal margin, splenic flexure opposite first lumbar vertebra and one vertebra higher than hepatic flexure. Transverse colon U-shaped, its lowest point being in left iliac fossa opposite exit of second sacral nerve. Is the constipation a result of sagging of transverse colon and sharp hepatic and splenic flexures?

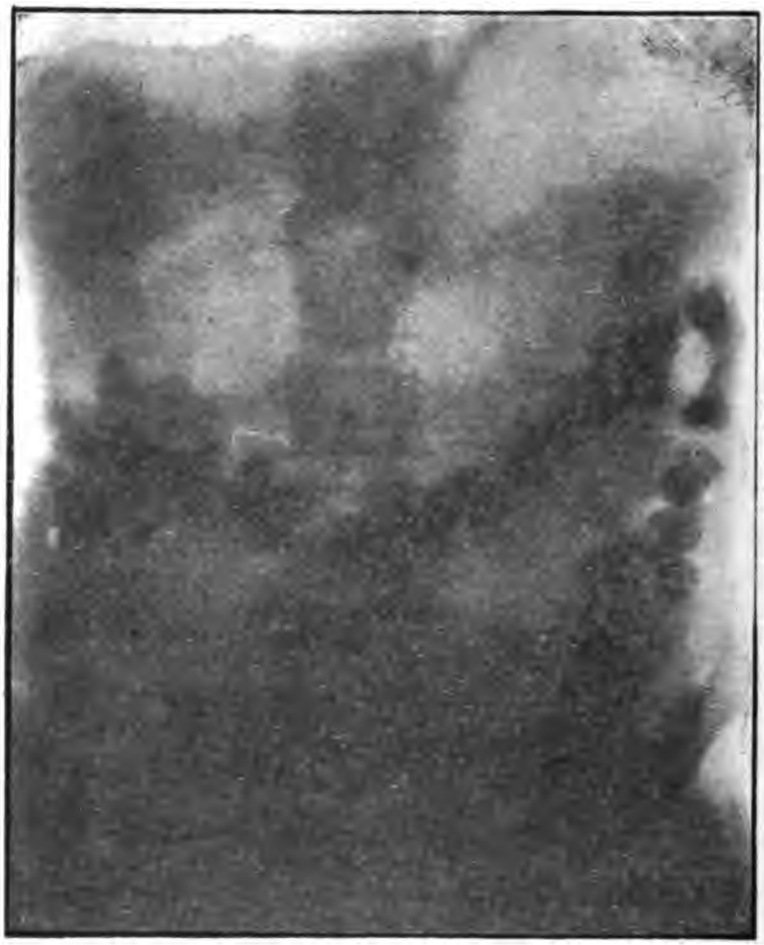

FIGURE II.

Case IV.—Hugo L., age sixteen. Normal.

(*a*) Immediately after bismuth meal, April 15. Stomach horn-shaped. Lowest point of greater curvature opposite and anterior to third lumbar cartilage. Lowest point of lesser curvature opposite and anterior to second lumbar cartilage. Pyloric end one inch to right of body of third lumbar vertebra. Stomach tapering down from cardiac end to pylorus, due to overlapping by liver.

(*b*) Six hours after (*a*). Some bismuth in coils of pelvis. Cecum well defined. Gas in ascending colon, slight amount in transverse colon. Descending colon beautifully shown. No bismuth in sigmoid flexure. Splenic flexure opposite first lumbar vertebra; hepatic. not visible. Transverse colon sags somewhat, with its lowest point opposite fourth lumbar vertebra.

(*c*) (Figure II). Twenty-seven hours after meal. One screen of calcium tungstate beneath plate. Negative shows whole colon including sigmoid flexure. Splenic flexure higher than hepatic. Transverse colon looped. Lowest point in front of fourth lumbar vertebra.

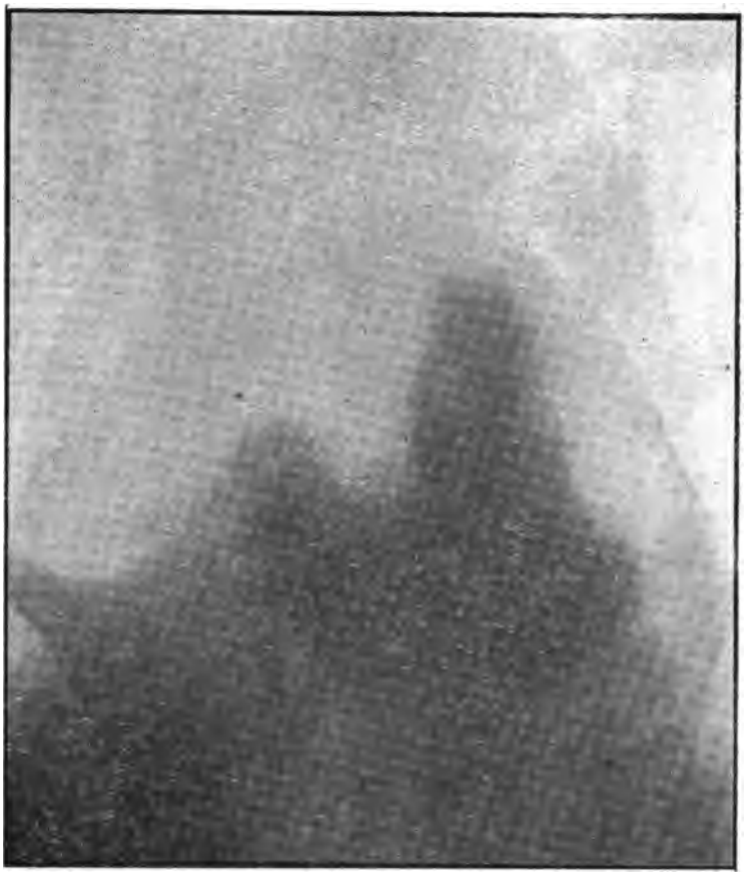

FIGURE III.

Case V.—Agnes B., age twenty-one. Prolapsed right kidney, upper border palpable. Anemic, neuresthenic, with pain in right side of abdomen.

(*a*) (Figure III). Immediately after bismuth meal, April 17. The negative shows entire stomach, including gas-containing cardiac end and bismuth-holding pyloric end. Lowest point of greater curvature two finger-breadths above symphysis pubis. Lesser curvature along left border and in front of spine, lowest point in front of fourth lumbar cartilage.

(*b*) Five hours after (*a*). Lower border one finger-breadth higher than in (*a*). Gas in upper part of stomach increased. Pyloric end and fundus still contain bismuth, the former no longer to right, but directly in front of vertebræ.

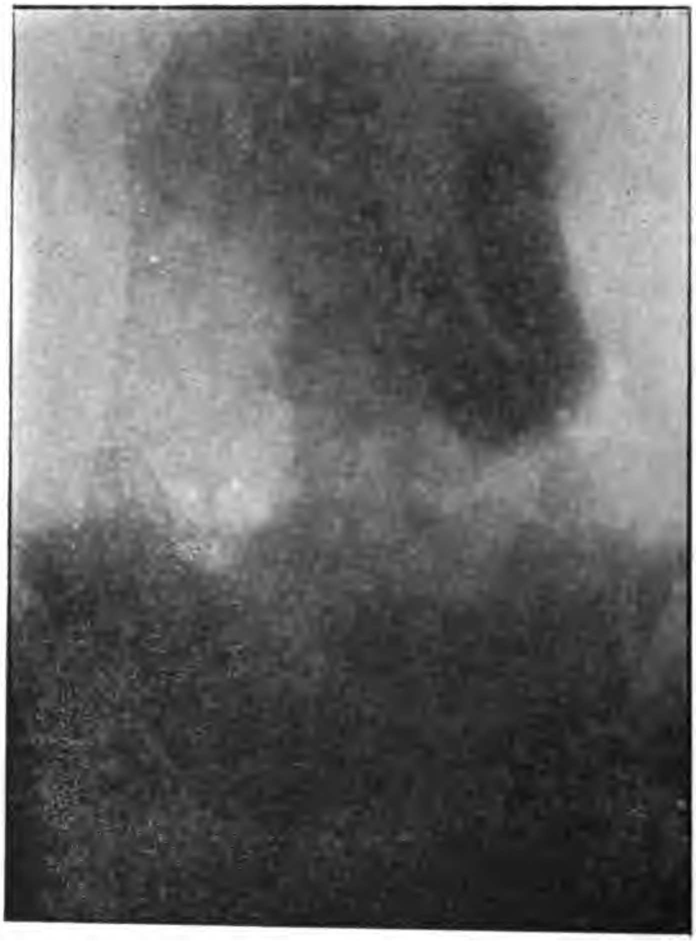

FIGURE IV.

(*c*) Twenty-six hours after bismuth meal. Cecum filled with bismuth up to rim of pelvis. Transverse colon descends thence into pelvis, across symphysis pubis into left side of pelvis. Entire colon does not seem to be more than twelve inches long.

(*d*) Fifty-six hours after bismuth meal. No bismuth anywhere.

Case VI.—Miss Nellie N., April 22, 1905. Chronic dyspepsia and nervousness since childhood.

(*a*) Immediately after bismuth meal. Entire stomach to left of spine, and sausage-shaped. Lowest point of greater curvature in left iliac fossa opposite lumbosacral cartilage. Pyloric end contracted to size of a finger for about that length.

(*b*) (Figure IV). Three and one-half hours after bismuth meal. General appearance of stomach not much changed. Lowest point of fundus on level of rim of pelvis. A little bismuth in coils of ileum low down in pelvis.

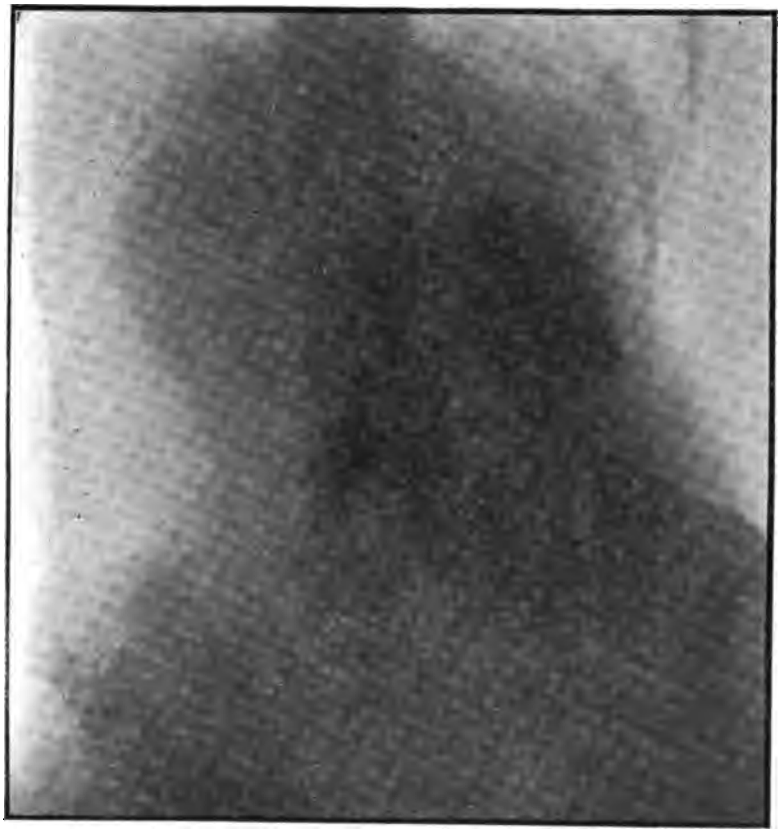

FIGURE V.

(*c*) Seventeen and one-half hours after bismuth meal. Cecum very full. Descending colon appearing, transverse colon invisible. Some bismuth in pelvis.

Case VII.—Doctor E., April 25. Hypochlorhydria and chronic dyspepsia for many years.

(*a*) Immediately after bismuth meal. Sausage-shaped stomach.

Lowest point of greater curvature in front of fourth lumbar cartilage. Lowest point of lesser curvature on left edge of third lumbar cartilage. End of pylorus in front of right edge of second lumbar cartilage.

(*b*) Five hours after bismuth meal. Lowest point of greater curvature about one finger-breadth higher than in (*a*). Considerable bismuth left in stomach. Two distinct hour-glass contractions forming three pouches.

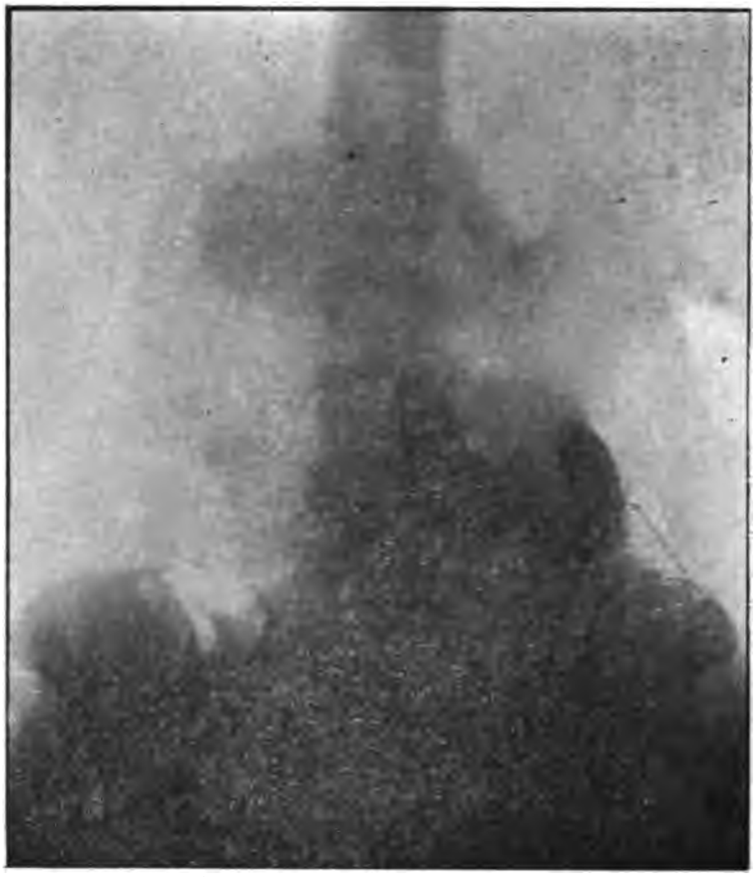

FIGURE VI.

(*c*) Twenty-four hours after bismuth meal. Stomach empty. Cecum filled. Ascending colon filled to hepatic curvature opposite second lumbar cartilage. Descending colon filled with gas and a few lumps of bismuth, and visible two vertebræ higher than ascending colon. Transverse colon strongly looped downwards, the lowest point being on a level with the fifth lumbar cartilage.

Case VIII.—Mr. S., age forty-eight. A hard nodular tumor palpable just to right and above navel. Cachectic. No coffee-ground vomiting.

(*a*) Immediately after bismuth meal. Stomach occupies almost the entire left side of abdomen. Lowest point of greater curvature three finger-breadths below level of rim of pelvis. Lesser curvature a straight line. An irregular dark spot the size of a dollar visible in negative one-half inch to the left of fifth lumbar vertebra. Right border evenly rounded into fundus and reaching to right edge of vertabræ, where it joins the fundus.

(*b*) Seven and one-half hours after bismuth meal. Two finger-breadths of bismuth remaining in stomach. Lowest point of stomach less than one finger-breadth higher than in (*a*). Some bismuth appearing in cecum.

(*d*) Twenty hours after bismuth meal. Bismuth has not yet disappeared from stomach. Cecum and colon indistinct.

Case IX.—Mr. J. L., April 28. Constipation, loss of flesh, swelling over bladder caused by loops of small intestines filled with gas which escapes with gurgling noise upon prolonged forcible pressure.

(*a*) Immediately after bismuth meal. Stomach across abdomen. Pyloric end two inches to right of body of second lumbar vertebra. Lowest point of greater curvature two inches to left of third lumbar vertebra. Lesser curvature an almost straight line across second lumbar cartilage. Enormous accumulation of gas in cecum and in small intestines in pelvis.

(*b*) Twenty-four hours after bismuth meal. Stomach contains no bismuth. Ascending colon filled with it. Transverse colon starts apparently from middle of ascending colon (sharp hepatic flexure) and runs in a zigzag line upwards towards splenic flexure. Descending colon filled with gas. Pelvis filled with gas.

Case X.—Miss Matie R. S. Chronic dyspepsia.

(*a*) Immediately after bismuth meal. Stomach in median line. Lowest point of greater curvature opposite center of fourth lumbar vertebra. Lowest point of lesser curvature at the right of third lumbar cartilage. Pyloric end three finger-breadths to the right of body of third lumbar vertebra. Gas in upper segment of stomach.

(*b*) Five hours after bismuth meal. Some bismuth in stomach still. Pyloric end one finger-breadth farther toward the right than in (*a*). Cecum filling with bismuth. Much bismuth in coils of small intestines in right end of pelvis. Cecum and descending colon greatly distended with gas.

(*c*) Twenty-seven hours after bismuth meal. M-shaped colon visible from cecum to lower pelvic cavity. Transverse colon not *acutely* looped; lowest part of loop crosses fourth lumbar cartilage.

Case XI.—Miss Van R., May 24. Inveterate constipation since childhood. Bowels never move spontaneously. No stomach symptoms. Well nourished and apparently healthy.

(*a*) Immediately after bismuth meal. Stomach vertical, gourdshaped, with the large end upwards. Lowest point of greater curvature crosses third lumbar cartilage. Pyloric end visible one inch to right of body of third lumbar vertebra.

(*b*) Six and one-half hours after bismuth meal. A little bismuth remaining in stomach to left of third lumbar vertebra. Cecum filling.

(*c*) Twenty-seven hours after bismuth meal. Entire colon visible except sigmoid flexure, which is indistinct. Hepatic flexure lower than splenic. Transverse colon runs obliquely upwards from right to left crossing the fourth lumbar vertebra in almost a straight line.

Case XII.—June 29.—Miss Nellie N. Same as *Case VI.*

(*a*) (Figure V). Immediately after bismuth meal. A penny stuck to navel with adhesive plaster and a half dollar placed on back opposite. Stomach entirely on left of spine. Bismuth appears in two separate masses but without apparent hour-glass contraction. Lowest point of greater curvature three finger-breadths below rim of ilium, opposite fifth lumbar cartilage. Lowest point of lesser curvature one inch to left of upper border of fifth lumbar vertebra. Tight lacing denied.

(*b*) (Figure VI). Five hours after bismuth meal. Lowest point of lesser curvature one finger-breadth to left of transverse process of fourth lumbar vertebra. Lowest point of greater curvature on level with crest of ilium. Hour-glass contraction of stomach between upper gas-containing and lower bismuth-holding portions. Bismuth in some of the coils of ileum in pelvis.

(*c*) (Figure VII). Twenty and one-half hours after bismuth meal, showed cecum, ascending colon and some bismuth in sigmoid flexure. Penny on navel.

(*d*) Thirty-three hours after bismuth meal. Bismuth still in cecum.

(*e*) Forty-seven hours after bismuth meal. Cecum still contains considerable bismuth.

Case XIII.—H. H. *Transposition of viscera*: heart, liver, spleen, stomach, and intestines. Health good.

(*a*) July 2, thirty minutes after bismuth meal. Stomach on right side of abdomen, comma-shaped, larger end upwards. Pyloric end in front of body of third lumbar vertebra, just behind navel. Apex of heart points towards the right.

(*b*) Six hours after bismuth meal. Stomach is empty.

(*c*) (Figure VIII). Eleven and one-half hours after bismuth meal. Cecum, ascending colon and transverse colon contain bismuth. Cecum on left side of abdomen, ascending less high (hepatic flexure on left side) than splenic flexure (on right side). Transverse colon crosses spinal column obliquely, from the left below to the right, on level with penny-marked navel.

Case XIV.—Mr. G. S., July 8. Morphine habitué. Periodical attacks of gastralgia.

(*a*) One hour after bismuth meal. Lowest point of greater curvature of stomach anterior to fourth lumbar vertebra, just above navel Lowest point of lesser curvature in front of third lumbar vertebra. Pyloric end just to right of spinal column.

(*b*) Seven hours after bismuth meal. Considerable bismuth left in stomach. Bismuth in some coils of ileum in pelvis. Cecum filling with bismuth.

(*c*) Twenty-one hours after bismuth meal. Cecum very much distended, the rest of the colon faintly indicated by a few spots of bismuth and by gas. Transverse colon crosses spine at the level of the penny.

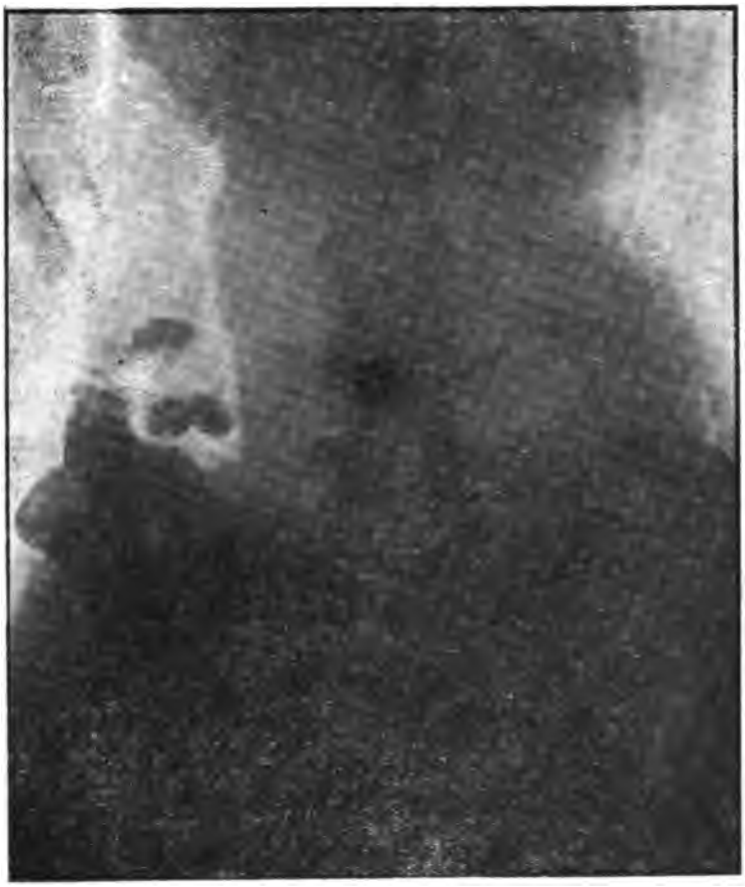

FIGURE VII.

Case XV.—Mrs. T., July 10.—Long-standing pain in region of right sacroiliac synchondrosis. Frequent attacks of irritability of bladder. Laparotomy and breaking up of adhesions of right ovary and tube to uterus and intestines two months ago, without relief of symptoms. Chronic obstinate constipation. Neurasthenic symptoms. Appetite good, and food does not distress.

(*a*) (Figure IX). Thirty minutes after bismuth meal. A tinfoil mark at end of xiphoid cartilage, a dime on navel. Lumbar spine consists of six vertebræ. Lowest point of greater curvature at pyloric end, two finger-breadths to the right of the third lumbar vertebra, counting from below upwards. Position of stomach diagonal. This skiagraph, like all of the preceding ones, was taken in the prone dorsoventral position, with the anticathode perpendicular to the navel.

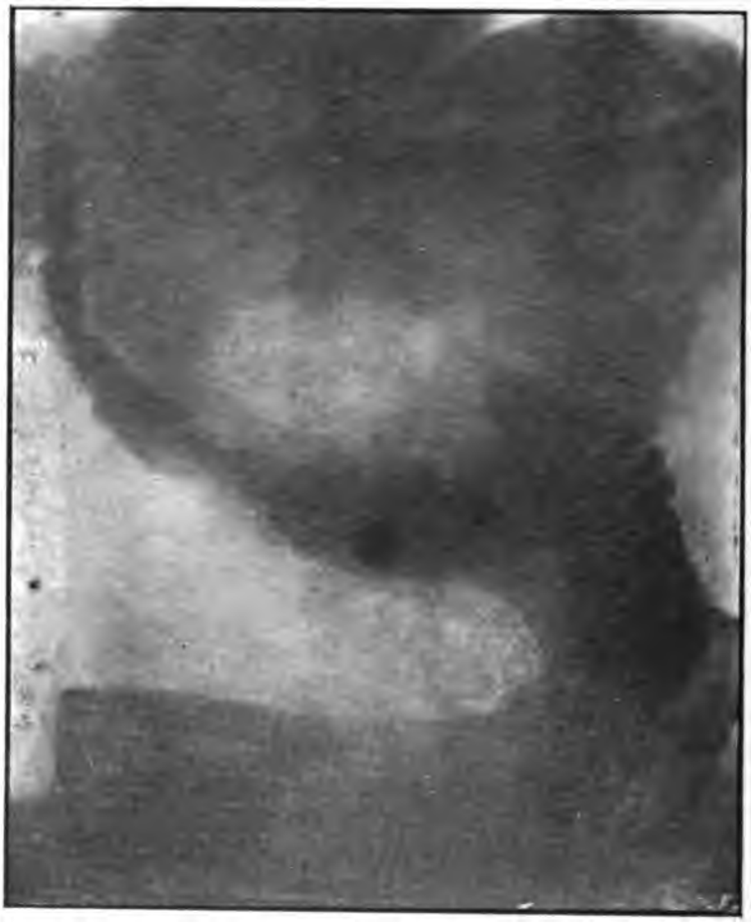

FIGURE VIII.

(*b*) One hour after bismuth meal. Standing position. This skiagraph was a great surprise on account of the difference in the location of the stomach, due to the position of the patient. The lowest point of the lesser curvature on level of the crest of the ilium, that of greater curvature one hand-breadth below navel. This marked gastroptosis failed to show in the prone, and was brought out by the standing position. All subsequent skiagraphs on this account, except when expressly otherwise stated, were taken sitting or standing.

(*c*) Six hours after bismuth meal. Considerable bismuth still in stomach. Lowest point no higher than in (*b*).

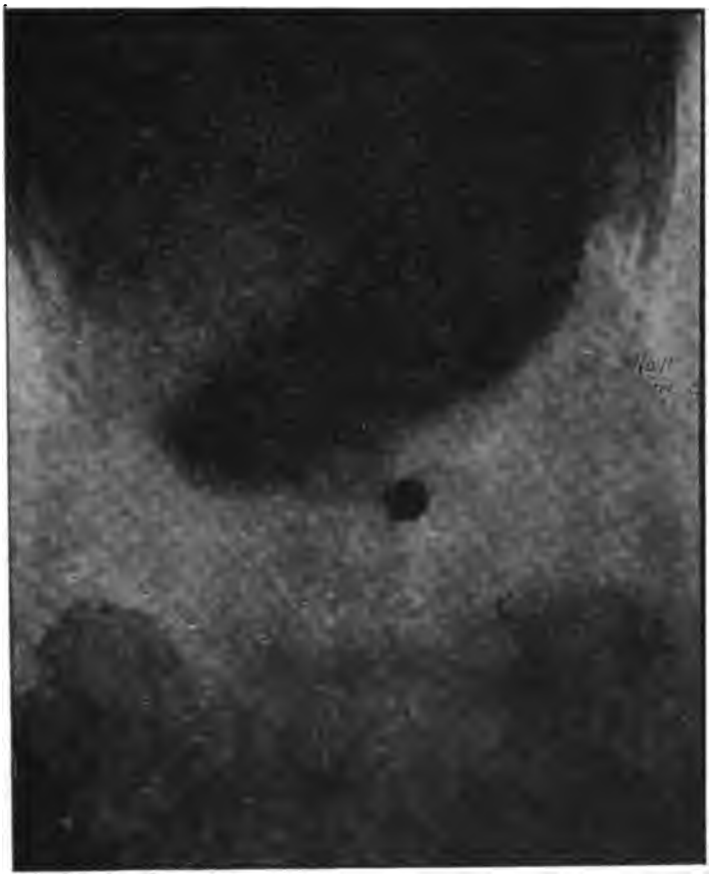

FIGURE IX.

(*d*) Sixteen and one-half hours after bismuth meal. Colon much prolapsed. Transverse colon U-shaped, reaching almost to the symphysis pubis.

Case XVI.—Mrs. Doctor F., July 17. Right nephroptosis, upper border palpable. Neurasthenia, constipation, dyspepsia.

(*a*) Immediately after bismuth meal. Lowest point of lesser curvature to left of fifth lumbar cartilage. Lowest point of greater curvature one hand-breadth below pelvic rim.

(*b*) Three-quarters hour after bismuth meal. This picture, taken with the patient placed horizontally, again proves the necessity of the erect position to determine the degree of prolapse; for, whereas in (*a*) the stomach rested in the iliac fossa, in this skiagraph it appears very much higher. The lowest point of the lesser curvature one finger-breadth to the left of the third lumbar transverse process, that of greater curvature one finger-breadth to the left of the fourth lumbar process.

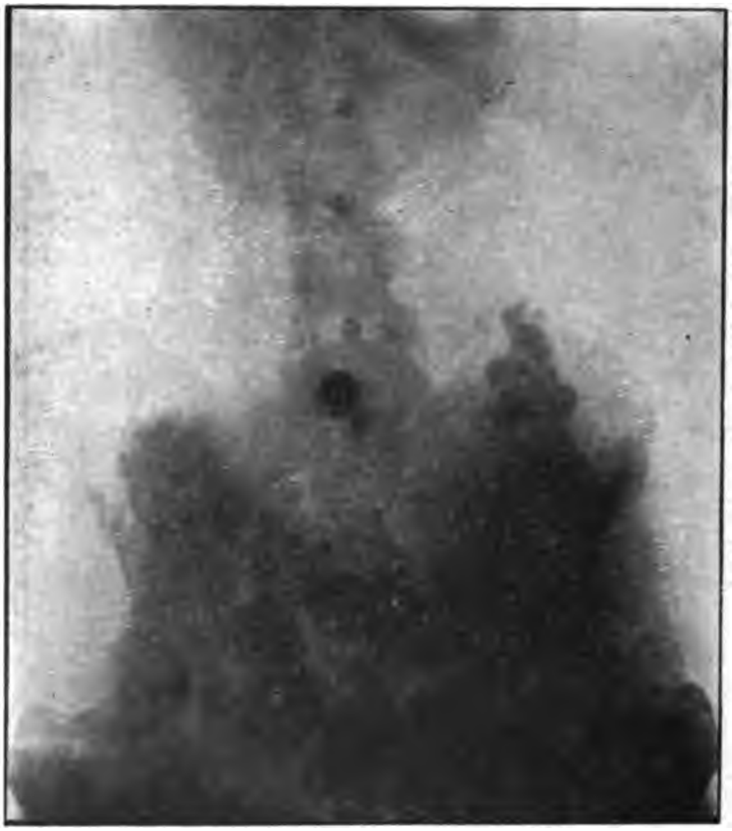

FIGURE X.

(*c*) Seven hours after bismuth meal. Bismuth still visible in lower segment of stomach, which is but little higher than immediately after the meal. Cecum beginning to fill.

(*d*) Twenty and one-half hours after bismuth meal. Transverse colon leaves right side at level of crest of ilium and crosses over to left, but is lost in cavity of pelvis, where it becomes invisible.

(*e*) Thirty-two hours after the bismuth meal. Differs but little from (*b*).

Case XVII.—Mr. J. M. Same subject as *Case I* and *II.* Normal.

(*a*) Position horizontal. Lowest point of greater curvature just above navel.

(*b*) Vertical position. Lowest point of greater curvature one finger-breadth below navel. The difference in location of the stomach due to position in this normal subject is, therefore negligible.

Case XVIII.—Mrs. W., July 19. Right kidney behind navel. Percussion led one of the most famous internists to locate the stomach chiefly on the right side, near cecum.

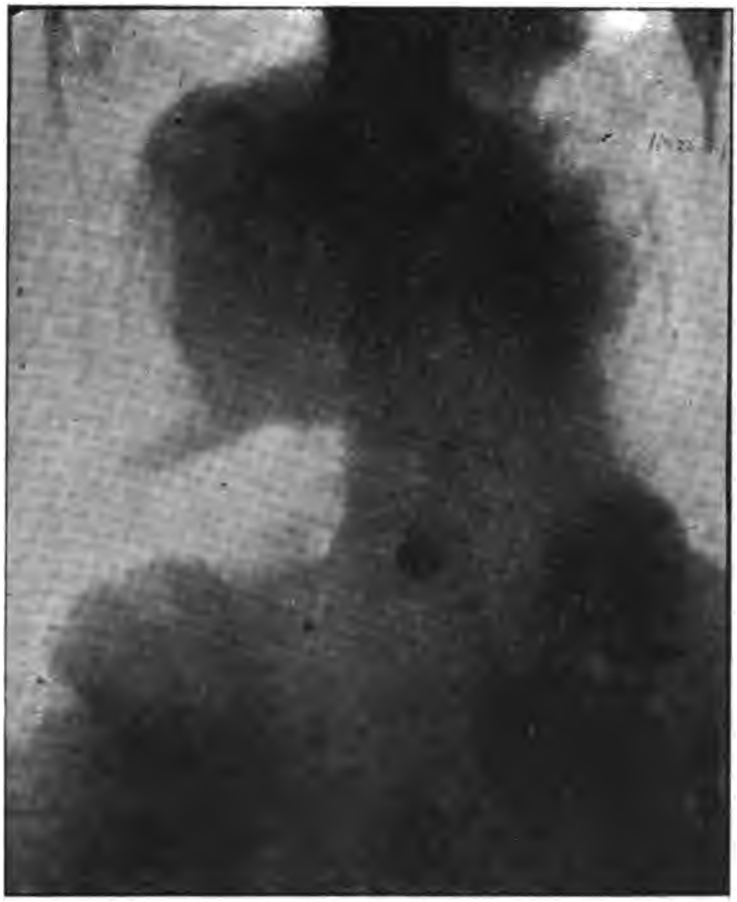

FIGURE XI.

(*a*) Fifteen minutes after bismuth meal. Lesser curvature runs parallel to left transverse processes of lumbar vertebræ down to the fourth lumbar cartilage. It then crosses spinal column, so that lowest point falls opposite upper part of body of fifth lumbar vertebra. Lowest point of greater curvature two finger-breadths below lumbo-sacral cartilage. Pyloric end two finger-breadths to right of body of fourth lumbar vertebra. Throughout its entire extent the greater and lesser curvatures run parallel to each other and not more than two inches apart.

(*b*) Five and one-half hours after bismuth meal. Some bismuth still in pyloric end of stomach, just to the right of the body of fourth lumbar vertebra. Cecum filling.

(*c*) Twenty-three and one-half hours after bismuth meal. Cecum, ascending colon, transverse colon and descending colon marked by deposits of bismuth. Hepatic flexure bent on itself, like a heavy-headed comma (,). Transverse colon sagging in center, where it crosses the spine obliquely upward from right to left, opposite lumbosacral cartilage. In spite of the long-standing and pronounced nephroptosis, the displacement of stomach and colon is less than in several others where the kidney was not prolapsed.

Case XIX.—Mr. F. B. W., July 26. Right inguinal hernia. Large hernia over cecum after appendectomy. Pronounced neurasthenia.

(*a*) Immediately after bismuth meal. Lowest point of lesser curvature in front of fifth lumbar vertebra; that of larger curvature three finger-breadths below promontory of sacrum. Pyloric end just to right of spine.

(*b*) Six and one-half hours after bismuth meal. Some bismuth still in lower segment of stomach below lumbosacral cartilage.

(*c*) Seventeen hours after bismuth meal. Bismuth in cecum and ascending colon corresponding to the ventral hernia outlined by a loop of wire fixed to skin. Rest of colon invisible.

Case XX.—C. R., age nine, July 20. Hysteria, moaning constantly when awake the last six weeks, with hands pressed over abdomen as if in pain. When asked whether she is in pain she sometimes answers, "Yes;" at other times she does not seem to know. Ordinary food is vomited as soon as taken, candy and bananas stay down.

(*a*) Skiagraph to determine possible presence of foreign body in stomach or intestines revealed nothing abnormal beyond much gas in ascending and descending colon.

(*b*) Immediately after meal of one pint of milk with one-half ounce of bismuth, part of it was vomited at once. Stomach resembles a mere piece of intestine. It is just at the left of the spine in its upper half and anterior to it in its lower segment. Lowest point of lesser curvature in front of body of second lumbar vertebra. Lowest point of greater curvature just to the left of third lumbar cartilage.

Case XXI.—Mrs. L., July 31. Apparently perfectly well.

(*a*) Immediately after bismuth meal. Taken during full inspiration. Stomach at left and in front of spine. Lowest point of lesser curvature one finger-breadth below lumbosacral cartilage, that of greater curvature two and one-half finger-breadths above symphysis pubis. Pyloric end in front of fifth lumbar cartilage.

(*b*) Immediately after (*a*), during forced expiration. It resembles (*a*) in every respect except that the lowest point of greater curvature is one-half finger-breadth higher than in (*a*).

(*c*) Six and one-half hours after bismuth meal. Lower segment of stomach still contains bismuth. Lowest point of greater curvature three finger-breadths higher than in (*a*) and (*b*). Stomach more toward the left than in (*a*). Cecum filling. Some coils of small intestine in left side of pelvis.

(*d*) Eleven hours after bismuth meal. Most of colon visible. Transverse colon across superior strait of pelvis.

(*e*) (Figure X). Twenty-one hours after bismuth meal. Like (*d*), but colon better marked, Y-shaped and strongly prolapsed.

Case XXII.—Miss N. N., same as *Cases VI* and *XII.*

(*a*) (Figure XI). Immediately after bismuth meal. Taken standing. Stomach almost vertical. Lowest point of lesser curvature opposite left sacroiliac synchrondrosis two finger-breadths below upper border of sacrum. Lowest point of greater curvature just above sacrosciatic notch. Pyloric end at left extremity of fifth lumbar cartilage. Transverse colon distended with gas.

(*b*) Six hours after bismuth meal. Some bismuth left in stomach. Pelvis showed masses of bismuth, as if in downward-displaced cecum.

(*c*) Cecum and part of ascending colon filled with bismuth. Base of cecum visible below symphysis pubis. Descending colon filled with gas.

CONCLUSIONS.

A cursory examination of the twenty-two cases described discloses the fact that the *x*-ray picture of the normal stomach and colon, semidistended with milk and bismuth, is not what our text-book of anatomy would lead us to expect. It is inadmissible to generalize on three or four normal cases, but it seems safe to say that the current conception of the size, shape and position of the normal stomach and colon is bound to be modified in the future.

No valid conclusion as to the position of these organs can be drawn from the examination of skiagraphs taken with the subject in a reclining position upon the plate. To get a correct idea of the displacement in any given case it is essential that the patient be skiagraphed in a standing or sitting position.

To minimize unavoidable distortion in work of this kind, in which plates of considerable size are needed (14x17 or 16x18), and in which the distortion is necessarily great, the anticathode should be not less than twenty inches from the plate. In order to form an approximately correct idea of the location of the organs the skiagraph should be interpreted according to the laws of projection. Also the source of light should be accurately centered. In fat people the navel is not a good landmark. Personally I center the anticathode over a spot on the spine corresponding to the fourth lumbar vertebra; and of late I have marked the navel as well by sticking a dime on it.

By observing the above precautions valuable data may be obtained. Carelessness of detail of technique will result in poor negatives that fail to show what is sought or, if good detail be secured accidentally, the picture will be so untrue as to be worse than useless.

On account of peristalsis a short exposure is necessary. For this kind of work, in which contrast is needed more than detail (unlike skiagraphy of the chest, in which detail is of relatively greater importance), quick exposure with one or two intensifying screens gives better results than long exposure.

Cases XXI and *XXII* go to show that even when the organs are unduly movable it makes but little difference whether the picture be taken after a full inspiration or expiration, the essential point being that the patient do not breathe during the exposure and, whether standing or sitting, remain perfectly still. It is well to let the subject hug the plate close.

The first skiagraph, taken soon after the bismuth meal, reveals the position and to some extent the size and shape of the stomach. If the text-books are correct I have not yet succeeded in finding a normal stomach. Extended *x*-ray observation will probably change the current conception of this organ.

The second picture is to determine the relative length of time needed for the stomach to empty itself of the bismuth meal. In what I regard as my normal stomach cases (I, II, III, IV and XIII), pictures taken in four to six hours after the meal show no bismuth in the stomach. If considerable bismuth remains in the stomach after six hours the patient may be made to fast one or two hours more and other pictures be taken at intervals if it is desired to know the exact length of time that it takes the stomach to empty itself.

If the first picture is taken at noon and the second at six in the evening, the subject may from that time on eat and drink as usual, and the third exposure can be made the next morning or noon to get the colon. If the subject is naturally constipated it will be well to wait until noon, if not, the morning hour is better.

The cecum is more of a receptacle than the stomach, judging by the length of time the bismuth remains in it. The jejunum is true to its name, and when normal is always empty in the picture. The ileum always contains some bismuth while the cecum is filling.

In order to get the plate down low enough to take the colon it is best to have the patient stand solidly against the plate. If a satisfactory picture of the colon is not obtained in this manner it is possible that a better result will be obtained after injecting into it two or three ounces of bismuth in milk or water.

Three skiagraphs are essential to ascertain the main facts, and as many more may be taken as are desired for special purposes. If it is true, as has been claimed, that "it is often of more importance in cases of heart disease to examine the abdomen than to distinguish the fine point of the auscultory symptoms" because "relieving gastroptosis may mean relief of the heart;[9] if prolapse of the abdominal organs is only half as common as our best internists now believe, and as the cases described in this article, especially Case XXI, lead us to suspect; and especially if the condition of ptosis and dilatation is the cause of the suffering, chiefly of women, attributed to it, the skiagraphic examination of the abdomen as attempted in this article cannot fail to add something of value to the other exact methods of diagnosis.

REFERENCES.

[1] Reed: "Diseases of the Stomach and Intestines," page 416.

[2] *Ibid.*

[3] *Ibid.*

[4] *New York Medical Journal.*

[5] Hemmeter: "Diseases of the Intestines," page 213.

[6] May Robson and Moynihan: "Surgical Treatment of Diseases of the Stomach," page 22.

[7] Williams: "The Roentgen Ray in Medicine and Surgery," page 358.

[8] Fortschritte a. d. Geb. der Roentgenstrahlen vii, 3.

[9] Earnest Gallant: "Treatment of Glenard's Disease." "International Clinics," Volume I, Series XV, page 135

ORIGINAL ABSTRACTS.

MEDICINE.

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THE RELATION OF IODIN EXCRETION TO THE THYROID GLAND.

Kocher has examined these relations, with interesting results (*Mitth. aus den Grenzgeb,* XIV, H. V.). In healthy persons iodin is almost completely excreted in the first twelve hours. In persons without thyroid glands the total excretion is slower. In goitrous patients there are interesting variations. In the case of diffuse hyperplastic, so-called parenchymatous goiters, and nodular goiters, with little or no retrograde changes, there is increased excretion of iodin and, at the same time, diminution of the goiters. In the case of nodular goiter with retrograde change, and mixed parenchymatous and colloid goiters, the iodin excretion is like that in healthy people, and the goiters do not become smaller. In colloid goiters there is increased excretion of iodin and no change in the size of the goiter. Further investigations show that goiters that decrease under iodin treatment contain little iodin; conversely, those that do not become smaller under iodin treatment contain an unusual amount of iodin. Iodism, or thyroidism, occurs when goiters that react to iodin by diminution in size and increased excretion, take up an abnormal amount of iodin. This seems to be worked up in a pathological manner and, getting into the circulation, causes chronic or acute thyroidism, the latter especially after renewed injection of iodin. The experiments indicate that in the early treatment of goiter iodin should be given in small doses, every other day. If retrogression is possible, it will soon appear. Iodin should not be given in large doses during a long time. If there is no diminution in size after the first small doses of iodin, different methods must be used in different cases. In those with extensive retrograde changes, iodin may be useless, in others, a long and intensive treatment may be indicated. G. D.

SURGERY.

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AND
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UPPER ABDOMINAL SYMPTOMS.

IN Volume XLV, Number II, of the *Journal of the American Medical Association,* Percy briefly considers some of the common symptoms of the upper abdomen and their practical significance. This is a most important field of investigation and will bear great results. He refers to the fact that despite the efforts of the pathologist and the internist the skilled operating surgeon must clear up the symptomology of this region.

Of the various symptoms pain is the most important. The patient's expression of it is, however, deceptive. The patient may not rightly locate the real seat of trouble. Muscular rigidity may vary according to the severity of the pain. If the pain be moderate muscular rigidity may be limited to the area of trouble. If severe rigidity will be more general. In the average chronic case not having an acute exacerbation, lesions about the gall-bladder are less sensitive than those of the stomach. Lesions involving the pyloric third of the stomach and gall-bladder cannot well be differentiated by external manipulative methods alone. Costal resistance is likely to be just as marked as is that of the muscles lower down, when covering an inflammatory process. This is especially true in abscess of the gall-bladder and cholecystitis. Pressure over the right lower costal arch, which does not elicit pain, will almost certainly exclude acute gall-bladder trouble. Comparison of costal resistance on the two sides is also important. Light finger percussion is useful especially in patients not too obese. An ulcer in the stomach or duodenum can often be located in this way. Another source of pain is distention from gas. The severity and extent of this pain is a valuable guide as to the inhibition of peristalsis and the intensity of the inflammation. The pain or distress resulting from the presence of food in the stomach is noteworthy. It is Nature's protest against the taking of food under circumstances when functions are interfered with. Again, the relief experienced in other cases whenever food is introduced into the stomach and the distress felt whenever the stomach has been empty demonstrates the pain of contact of gastric juice with an ulcer of the stomach or duodenum. Graham is quoted as saying that pain is due almost wholly to the irritant actions of the acids on the open ulcer, with the added element of spasm. The greater the quantity of liquid in the stomach and the higher the degree of acidity the more severe the pain. In other words, intensity of pain and degree of acidity run about parallel. The irritant action of the food as a cause of pain, by passage over the diseased area, cannot enter into the question; because anything that diverts, dilutes, neutralizes or removes the acid liquid, lessens or entirely removes pain. Antacids, as a rule, quiet for a time and remove nothing; vomiting or irrigation of the stomach relieves by removing offending acid; but no rough particles of food which could irritate are found. Nausea and vomiting are also common symptoms. They usually succeed pain and are the result of it. If the ulcer is in the stomach and is located so as to be brought early into contact with the acid gastric juice, then the nausea or vomiting will be spoken of as occurring within an hour or two of taking food; sometimes the patient will complain of pain at once. This is especially true in cases of gall-bladder inflammation and adhesions about the gall-bladder. If the ulcer is duodenal, then four or six hours may go on before the nausea may develop. The size of the stomach and the impossibility of food leaving the stomach should also be borne in mind. Lavage will aid in determining this condition. An interesting feature of these cases is that the loss of weight is not as a rule noticed during the first few months or years. In fact these patients sometimes gain in weight temporarily. Later, however, due to lack of nutrition and infections the bodily weight begins to fail. Bleeding from an ulcer of the stomach or duodenum is not a prominent symptom except in far advanced and long continued cases. Sometimes bleeding occurs and is not observed by the patient owing to the fact that the blood has passed out with the stools. Careful investigation is necessary to determine this point. Macroscopically the same kind of stool—meconium-like—can be produced by the infected bile which may be thrown down into the bowel from a gall-bladder, the subject of cholecystitis. In the latter cases the hematin crystals will not be found. The pain and distress which may accompany these cases of cholecystitis will also lead to a symptomatic diagnosis of ulcer of the stomach or duodenum. In these cases there are periods in which there will be acute or subacute exacerbations of the trouble. Different from a tubercular temperature it is apt to be normal morning and evening, while in the tubercular form it is more likely to be subnormal in the morning and above normal in the evening. In addition to the temperature there is also a little more mental and physical depression, a state which the author calls the gastric crisis of ulcer or cholecystitis.

The author mentions, without much discussion, other symptoms such as pain radiating in the region of the right scapula or half way around the waist line on the right side, jaundice, the belching of sour gas, cramp colic, constipation, foul breath, bad taste in the mouth and distention with gas. As to age these symptoms are referable to patients from young adult life to those advanced in years.

The diagnosis in these cases between stomach and gall-bladder pathology is not always easily made. In some cases both affections may be present. The primary one will be difficult to determine even when the abdomen is open. Localized peritonitis and recent adhesions when the abdomen is open, will serve as infallible guides in the chronic cases with acute exacerbation; while the enlarged lympathics without adhesions will point the way in more acute cases. We have as yet no means of making an early diagnosis either in cholecystitis, cholangitis, or in cancer of the stomach. But we do know that these conditions as indicated by the symptoms pointed out can be remedied only by the aid of surgery. In affording this aid the internist and surgeon must work together. Otherwise the results of these cases will in the future be as in the past—regrettable failures. F. B. W.

GYNECOLOGY.

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AND
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THE RELATION OF THE APPENDIX TO PELVIC DISEASE.

PETERSON (*American Journal of Obstetrics,* August, 1905) adds eighty-five cases to the two hundred previously studied. The findings in the new cases are practically the same as in last year's report. The specimens were arranged for classification in the following groups: (1) negative, (2) chronic inflammation, (3) doubtful significance, (4) former inflammation, (5) acute inflammation, (6) periappendiceal inflammation. Of the eighty-five cases, 49.3 per cent were found to be normal; 50.7 per cent showed, microscopically, evidence of present or former inflammation. In twenty cases the appendix was adherent; not all of these, however, were microscopically abnormal.

A number of appendices, although macroscopically apparently diseased, were found to be perfectly normal. Hence, shape, size and position of the appendix cannot be taken as an index of disease.

There were thirty-four cases of chronic disease of the appendages, in fifty per cent of which the appendix was abnormal.

Forty-eight per cent of the twenty-one cases of uterine fibromata showed former or present diseased condition of the appendix.

Of the eight cases of large ovarian cyst, four, or fifty per cent were observed to have accompanying disease of the appendix.

The practical conclusions to be drawn from this and the first series of cases are:

(1) Appendices which look diseased may be perfectly normal on microscopic examination, and *vica versa* apparently normal appendices may microscopically prove to be the seat of existing or previous inflammatory changes.

(2) Nearly fifty per cent of the cases operated for pelvic disease have abnormal appendices, as shown by microscopic examination.

(3) The operator's duty then, providing the condition of the patient warrants it, is in every laparotomy for pelvic disease to remove the appendix.

C. G. P.

OBSTETRICS.

By WILLIAM HORACE MORLEY, PH. B., M. D., ANN ARBOR, MICHIGAN.
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ECLAMPSIA.

ROBERT JARDINE (*Journal of Obstetrics and Gynecology of the British Empire,* July, 1905) reviews fifteen consecutive cases, which came under his observation in the preceding eighteen months.

In the earlier cases he resorted to accouchement forcé, as an early step in the treatment. His further experience leads him to believe that this is not indicated, except in the most severe cases, unless the seizure fails to yield to his other methods of treatment. Treatment is started on admission, waiting for the os to dilate, when the labor is allowed to go on or forceps are applied according to the indications of the case. The treatment consists of the hot pack, purgation (salts), venesection, saline transfusion, and, occasionally, chloral and the bromides. The hot pack seems very efficacious in allaying the restlessness and irritability. Venesection, which he formerly employed in the plethoric cases only, he finds applicable to most cases where the pulse is full and strong. Seven or eight to fifteen or twenty ounces of blood are withdrawn, and then the saline, to every pint of which a drachm of sodium acetate is added, is transfused directly into the vein in quantities of from one to three pints. He claims that the withdrawal of the blood removes an appreciable amount of the toxin, and the saline dilutes the remainder.

In his cases under the treatment outlined, he secured uniformly favorable results, although in some of the cases the outcome was in doubt for some time. Opium he does not prescribe. He calls attention to the low vitality of the tissue in this condition, citing a case of extensive sloughing, where ethyl chloride had been used to freeze the tissues of the breast before introducing the trocar. In closing he recalls his observations of the great increase of albumin in the urine associated with maceration of the fetus, and strongly recommends his line of treatment in cases of eclampsia. W. M. S.

SOME FURTHER NOTES ON THE TOXEMIA OF PREGNANCY.

William S. Stone (*Medical Record,* Volume LXVIII, Number VIII), under this title, gives some further observations in cases of toxemia, and his deductions from the same. As stated in a former paper, he believes the primary lesions in these intoxications, especially those of the more severe type, are degenerative hepatic ones.

The ordinary clinical methods of urinary analysis will not, as a rule, give an adequate idea of the gravity and extent of the intoxication. The toxemias of pernicious vomiting and eclampsia are, he believes, very closely related, if not identical. The urinary evidence of the disturbance of the metabolism may be found in the change in the proportions of the nitrogen elements, the urea nitrogen being decreased, and the amino-acid and ammonia nitrogen increased. However, the increase of the relative amount of the ammonia nitrogen is not always a reliable indication of the seriousness of the intoxication, nor can the albumin and casts be taken as an infallible guide to this condition. He has found the indican test a valuable aid to the recognition of a serious toxemia, and recommends this as a routine test in laboratory work.

In conclusion, either condition may be present without giving any evidence in the urine, as examined by the ordinary clinical methods; when there is a persistence of albumins and casts, or an increase in the indican (this being included in the routine tests), one should make a more thorough and complete examination of the urine.

W. M. S.

PEDIATRICS.

By ARTHUR DAVID HOLMES, M. D., C. M., Detroit, Michigan.

CLINICAL EXPERIENCE WITH ANTITOXIN.

Fisher (*New York Medical Journal,* June 17, 1905) presents some facts from his own experience as to the relative merits of large and small doses of antitoxin, and a résumé of the cases in the Willard Parker Hospital for the past two years showed about fourteen per cent mortality with the larger doses as against twenty-one per cent with the smaller ones. The doses used varied from 1,500 to 10,000 units. There should be no tendency to place exclusive reliance upon the antitoxin, but other established means should be employed. The dose should be one capable of stopping the growth of the pseudomembrane and of reducing the fever. The author has never seen any bad results from the larger doses. Large exudates require large doses, to be repeated in twelve hours if no improvement is evident. Statistics from other hospitals show that the mortality is lower when large doses of antitoxin are used.

ORTHOPEDICS

By IRA DEAN LOREE, M.D., Ann Arbor, Michigan.
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CONGENITAL ABSENCE OF TIBIA: TRANSPLANTATION OF THE HEAD OF THE FIBULA: ARTHRODOSIS AT THE ANKLE-JOINT.

T. Halstead Myers reports (*Medical Record* for July, 1905) the case of a boy, two years of age, who entered Saint Luke's Hospital May 5, 1904. The examination with skiagraph showed entire absence of the right tibia. Measurement from the anterior superior spine of the ilium to the external malleolus on this side showed two and three-quarters inches shortening. The head of the fibula articulated with the upper and posterior portion of the external condyle, its shaft was curved outward and was one and three-quarters inches shorter than its fellow. The foot was in marked equino-varus. The leg was habitually a little flexed and adducted with slight power of flexion or extension, passively the joint could be fully flexed. It was too relaxed for use and the child had always walked on his knees. Examination of the muscles showed no reaction of degeneration.

The patient came to operation June 21, 1904. An incision was made across the outer half of the knee-joint, opening the articulation between the head of the fibula and the condyle. The capsular ligament and the external lateral ligament were thick and strong and had to be freely divided to enable placing the head of the fibula between the condyles. The patellar ligamentt which was inserted well below the head on the inner side of the bone was shortened and transplanted to the anterior surface of the fibula. Some of the capsule on the inner side was removed and the remainder attached to the periosteum of the head to hold it more firmly in its position. A rubber tissue drain was used and sterile dressing applied. This much of the operation secured three-quarters of an inch for the length of the limb.

By a transverse incision the ankle-joint was next opened, care being taken not to injure nerves or tendons. The external malleolus was cut off, the articulating surface of the astragalus denuded and the former placed squarely upon it and held in this position by several strong catgut sutures. A plaster-of-Paris spica bandage was applied, correcting the varus and holding the leg extended in slight knock-knee position to prevent redisplacement of the head outward. The bandage was replaced December 16, 1904, by a walking brace which had joints at the hip, knee and ankle and so arranged with perineal straps as to relieve the body weight.

Final results reported June 13, 1905, show flexion of the limb to 90°. He can almost fully extend it and walks upon it all day.

LARYNGOLOGY.

By WILLIS SIDNEY ANDERSON, M. D., Detroit, Michigan.
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THE FALSETTO, OR EUNUCHOID, VOICE.

Homer Dupuy (*Laryngoscope*, June, 1905) calls attention to this unfortunate condition in the adult male, that brings with it a most unmerited stigma which follows the individual in all his social and business relations. The male larynx at puberty undergoes enlargement in all diameters, increasing more in depth than in height, which causes a lengthening of the vocal cords, thereby causing the high-pitched, puerile voice to be replaced by the deeper tones which characterize the man. The intimate relation between the genital organs and the voice is mentioned, and examples of emasculated males with soprano voices are given. Attention is properly drawn to the fact that in the large majority of cases a feminine voice in a man is no indication of doubtful sexuality. This head voice is rather a result of physiologic error, induced by the false adjustment of the phonatory muscles and by faulty breathing. When these subjects are instructed to read aloud in the three registers, the low, medium and high, it is readily perceived that the lower tones are totally wanting, the medium are weak, while the upper register is the only one which they seem capable of using without effort or fatigue. This anomaly may be induced by violent nervous excitation, or acquired by self-culture, as in young men playing female parts.

The treatment which the author advises is muscle training and voice placing by means of vocal and breathing exercises.

This article deals largely with those cases which are due to habit, or nervous excitation, and makes no mention of cases where the correction of nasal obstruction, or the removal of enlarged and adherent tonsils, is followed by a marked lowering of the pitch of the voice and the improvement of its quality.

DERMATOLOGY.

By WILLIAM FLEMING BREAKEY. M. D., Ann Arbor, Michigan.
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ALOPECIA AREATA, A FORM OF RING-WORM.

Jonathan Hutchinson (*Polyclinic*, July, 1905) reaffirms his views on the nature of alopecia areata as follows:

"You will bear me witness that I spare no opportunity of endeavoring to convince you that alopecia areata is a phase of true ring-worm;

in other words, that tinea decalvans and tinea tonsurans, are transmutable. In some instances the decalvans form is in itself contagious (school prevalence has been observed); in others, the grown up person exposed to the contagion of the common ring-worm in a child develops alopecia areata, but in the large majority of cases this latter is a sequel in adults of ring-worm from which they have suffered in childhood. When it begins on the chin or cheeks, it is probably usually contracted at the barber's, but when on the back of the head we may plausibly suspect contagion from resting the head on the high back of an easy chair.

"Those who discredit my creed in this matter, allege that in their experience only a small minority of their alopecia patients admit having had ringworm in childhood. My own statistics would show that at least three-fourths have had it. Much depends upon the amount which we have taken in the collection of our facts. If you accept the first reply of your patients to the question 'Did you ever have ringworm in childhood?' you will certainly find that but few answer in the affirmative. The result will, however, be very different if you ask the patient to make inquiries at home, and think the matter over, and answer the questions at his next visit. Those who remember having ring-worm are none of them in error whilst it is not improbable that a very considerable proportion of those who deny it are so."

NEUROLOGY.

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THE SUBJECT OF SYNESTHESIA.

Henry Lee Smith, M. D., has an article in the July *Bulletin of Johns Hopkins Hospital* on "Synesthesia." The author says that although the subject has attracted a good deal of attention abroad, it is only lately that physicians have reported cases in this country. The phenomena of the condition are known as "secondary sensations" or "associated sensations," by which are meant constant and involuntary subjective impressions, associated with actual perceptions. Synesthesias are found in many persons to a limited degree, but cases containing numerous and well-marked features are exceptional and always of interest. Color hearing or sound seeing, and visualization of serial numbers, dates, important events, et cetera, are mentioned as being illustrations of this condition. Six cases are reported by the author, giving the various types of the disorder. The writer says that as to the true nature of synesthesias, nothing positive is known. While some investigators regard the phenomena as pathological, others consider them as strictly physiological. He quotes Baldwin, as stating that "synesthesias of all sorts cannot be considered specifically abnormal, certainly not morbid, but belong to the realm of the unusual and idiosyncratic, within which explanation is difficult." The author states that "associated sensations" are not uncommon, and believes that, if more careful study were given by the physician to these conditions, the psychological data obtained would not be void of practical results. I. H. N.

HYPERPLASIA OF THE CHROMOPHILE CELLS OF THE HYPOPHYSIS AS THE CAUSE OF ACROMEGALY, WITH A REPORT OF THE CASE.

This is the subject of a paper by D. D. Lewis in the *Bulletin of the Johns Hopkins Hospital* for May, 1905. The author reviews the five well-known theories to account for the pathology of the disease, and in conclusion quotes Benda, who regards acromegaly as being due to hypertrophy and hyperplasia of the chromophile cells of the hypophysis, which producing an excessive activity of the gland, are responsible for the syndrome of the disease. The case reported by the writer is complete, both in its clinical and pathological aspects. In conclusion the writer states that the case is noteworthy, in that, first, it came to autopsy at an unusually early stage of acromegaly. Second, the hypophysis appeared normal on gross, but microscopical examination revealed a hyperplasia, especially of the chromophile cells, which is confirmatory of the theory that acromegaly is caused by excessive function of the glandular elements of the anterior lobe of the hypophysis.

I. H. N.

EDITORIAL COMMENT.

ASCENDING CURRENTS IN MUCOUS CANALS AND GLAND DUCTS, AND THEIR INFLUENCE ON INFECTION.

Mr. C. J. Bond, F. R. C. S., of Leicester, England, in the Address on Surgery before the British Medical Association, gave a valuable and suggestive discourse, pointing out how the study of surgical fistulæ throw light upon very important questions in pathology. From his own experiments in cases of colotomy, he shows that:

(1) There is an upward current capable of carrying foreign particles, such as powdered indigo, along the bowel, and taking about twenty-four hours to pass from the anus through the sigmoid flexure to the colotomy opening. The shortest time recorded has been twelve hours.

(2) This current is not arrested by stricture of the rectum, provided there is some patency of channel left.

(3) It is not essential for this upward current that the fecal current should be wholly diverted or absent, or that the bowel should be prevented from undergoing brisk downward peristalsis.

(4) This ascending current takes about three days to pass from the anus the whole length of the large intestine.

The upward carriage is not brought about by phagocytes, or by capillarity. It does not occur in a dead colon. Even in healthy animals there is some upward flow, and this is quickened by the administration of an aperient, which acts by increasing peristalsis, or, very possibly, by increasing the secretion of mucus. Mr. Bond suggests that the particles are carried along by a mucous current, going on at the same time, or alternating with the downward current in the central part of the lumen of the bowel. Such currents have been supposed to be due to reversed peristalsis, but the author thinks that is very unlikely. He thinks that by means of such upward streams nutritious fluids and particles which are absorbed out or squeezed out of the gradually hardening feces, are carried into the emptying reaches of the bowel and are presented to the free mucous membrane for readier absorption.

In the Fallopian tubes similar currents have been demonstrated. Indigo placed on or in the os uteri has been transported to the contents of the tubes, or in some cases to the peritoneal surface of the broad ligament, mesosalpinx or the fimbriæ of the Fallopian tubes. This must be due to ciliary action or an ascending mucous stream. Even when there was severe tubal disease the indigo was transported as in three cases of double pyosalpinx, and in two cases of tubal pregnancy with rupture or abortion, and it also hapened in senile or postclimacteric uteri. In some cases of pyosalpinx it was clear that there was a communication between the tubes and the uterus, without manifest discharge from the tubes. It is not necessary to place the indigo in the os. If it be deposited in the vault of the vagina it is occasionally found later in the tubes. The question of the size of the particles is important. Particles about the size of lycopodium grains seem to be the limit. The author concludes that regurgitation of tubal blood and mucus may occur from the abdominal end of the tubes, and that in many cases of dysmenorrhea the pain is tubal. He also points out the danger of infection from dirt, lotions, and ointments and from indiscriminate curetting. The door, though open, is guarded by the watchful peritoneum. Foreign particles and fluids introduced, as it were, *guttatim*, if not too virulent, are at once incarcerated and rendered innocuous. But it should surely make us all most careful to know that any powdered substance we introduce into the os uteri will probably be found within twenty-four hours, inside the peritoneal cavity.

In cases of gall-bladder fistula, indigo given by the mouth was recovered from the bile. In two cases it was absent from the gall-bladder and bile duct at the time of operation, but found when the fistula was established some days later. The author thinks the indigo in these cases also is carried by mucous currents. The quantity is very small, as one would think from the lateral position of the biliary outlet, but the author thinks he has seen food particles also in fistulous bile. Such particles may easily serve as nuclei for gall-stones.

The author has had few occasions to examine the processes in the urinary tract, but in one case where the ureter had been brought to the surface indigo injected into the bladder appeared at the opening, showing an upward current in the absence of any urine. In cases of suprapublic cystotomy indigo placed in the urethra appeared in the bladder, in the male and also in the female.

In a case of chronic otitis media, with perforation, indigo was carried from the pharynx in four days.

In cancer of the breast indigo was found sparingly in several parts, after having been placed on the nipple, and in a case of mastitis with a scirrhous nodule indigo was found beneath the nipple, but not in the part invaded by growth.

The author concludes that the currents described are formed by some interference with the terminal flow in the various organs; or by arrest or diversion of the secretions. As regards its mechanism, ciliary action can be ruled out, because cilia are absent in several organs examined, as the lower genital tract, biliary ducts and skin ducts. Irregular or reversed muscular contractions would be able to produce the results, but have not been demonstrated. The essential condition seems to be a living tube, whose walls are wholly or partially in apposition, lined by mucous secretion, while the reversal of the mucous current is favored by any condition, such as fistula, which leads to arrest or diversion of the ordinary secretion of the viscus or gland. The practical bearing of the observations is obvious, in pointing out the value of true cleanliness.

ANNOTATIONS.

ANENT THE AXIS AND ATLAS.

Tamassia, in a recent contribution to current medical literature, comments on the tremendous resisting power of the axis and atlas to dislocation. The doctor contends that accidents of this nature are quite infrequent as the result of violence other than hanging. After extended observations on the human cadaver the conclusion is reached that the enormously resistant neck ligaments and contiguous muscles afford such extraordinary strength to this region that whenever dislocation of these bones occurs the mishap is undoubtedly consequent to some pathological condition of the ligaments. Experiments incline the author to the belief that dislocation can most easily happen from flexion forward or to one side of the head or upper cervical vertebræ, or by rotation more or less transversely.

AMPUTATION CAUSED BY CONGENITAL ACCIDENT.

Hirigoyen reports an interesting case of congenital amputation of the forearm. The mother of the unfortunate infant was a primipara, twenty-one years of age, who had undergone a normal pregnancy, and whose family and personal history was negative. The infant itself was perfectly formed, with the exception of the left forearm, which was about one-quarter of the normal length and which presented a cone-shaped stump, the radius and ulna being surmounted by a protecting eminence of cartilage. The mother was unable to account for the accident, and denied having experienced a maternal impression. Notwithstanding search was made in vain for the missing member, the writer believes that the case is one of true amputation.

AN ANGLO-SAXON'S OPINION OF ALCOHOL.

Sir Frederick Treves, Surgeon to the King, in a recent address before an English temperance society, paid his respects to alcohol by pronouncing the liquid a distinctly toxic product, and asserting that as much precaution should be observed in its employment as is exercised in dealing with other poisons. Referring to the attitude of the medical profession toward alcohol during the past quarter century, the speaker expressed the opinion that its administration as a therapeutic agent has materially diminished, and that physicians generally are prescribing less of the product each year. Sir Frederick strongly decried the use of spiritus frumenti as an appetizer, claiming that it positively retards digestion, and that after the passing of the temporary stimulating effect, capacity for work is greatly diminished, likewise adding that its ingestion militates against quick, keen and alert judgment.

CASUALTIES INCIDENT TO LIGATION OF CAROTIDS.

Hansell, of Philadelphia, reports a case of exophthalmus treated by ligation of the right and left common carotid arteries. The affection, which originated from a blow on the right side of the face, finally involved the cranial cavity, the patient exhibiting all the symptoms of arteriovenous aneurism in the cavernous sinus. Constant orbital pain, diplopia, and immobility of the eyeballs were experienced, and notwithstanding medical treatment the condition persisted with increasing severity. Ligation of the left common carotid was immediately followed by effacement of the retinal arteries, which were invisible with the ophthalmoscope. The operation afforded relief for about a month, when the symptoms returned with the complication that the vision of the left eye, which had heretofore been unaffected, became involved, frequent retinal hemorrhages supervening. The right carotid was now ligated, with consequent edema of face and brain. The patient succumbed from convulsions within five days. Hansell refers to six other cases of ligation of the common carotids, five of which were reported wholly or partially cured, the sixth terminating fatally.

STUDIES ON THE ANTISEPTIC VALUE OF SOAP.

Rodet, of Paris, has conducted quite extensive experiments with common soap for the purpose of ascertaining its antiseptic value. The staphylococcus pyogenes and bacillus typhosus were the organisms employed in the observations, the soap used being found after chemical analysis to contain no free alkali. A one per cent soap solution destroyed many of the staphylococci after a two-hour immersion, but the typhoid bacillus was not affected after a period of three hours. A five per cent solution readily killed all the staphylococci in less than twenty-four hours, while but ten minutes were required to destroy the typhoid bacillus in a solution of the same strength, provided a temperature of 25° centigrade was maintained, the organism being much more readily killed at 37° centigrade. Soap lather has a strength exceeding ten per cent, and Rodet declares that for disinfecting the hands prior to surgical operations common soap is of considerable value.

TYPHOID SERUM IN TYPHUS FEVER.

Elischer and Kentzler have conducted extensive experiments regarding the therapeutic value of typhoid serum—either from the body of immunized animals or from the blood of convalescent persons—in the treatment of typhus fever, and pronounce the action to be *nil*. The bacillus typhosus is thought to inhibit bacteriolysis in the body in two ways: (1) There is an overabundance of amboceptors, which prevent the complements from attacking the bacteria; and, (2) The serum develops an activity comparable to that of anticomplementation, from which it differs in the fact that its active agent is destroyed at 56° centigrade. The endotoxins of the organism are the factors which cause the damaging effect, but it is only after the liberation of these poisons, that they assume activity and are enabled to attack the body, through the lysis of the bacterial bodies. Satisfactory results may be obtained, therefore, only when the number of organisms is so small that the amount of endotoxin liberated by their destruction is too small to produce fatal result.

CONTEMPORARY.

THE HISTORY OF MEDICINE.

PART FIRST.

THE GREEK ERA.

[DOCTOR JOSEPH P. WIDNEY IN SOUTHERN CALIFORNIA PRACTITIONER.]

In treating of the subject it has been my purpose to make it not simply an essay of interest to professional men alone, but to trace the history of medicine as only a part of the greater history of the growth of human thought, and, especially, omitting a detailed account, century by century, to picture a few of the great eras of the world's mental life, with their wonderfully attractive blending of lights and shadows.

The early history of medicine is involved in the same obscurity which marks the first beginnings of many other branches of human knowledge. This shadow of night resting over its origin does not, however, indicate its nonexistence in the primitive days of man's life upon the earth. With the first pain that came to man, came, as a natural sequence, an attempt, however imperfect, however rude, to give relief, to alleviate the pain, to restore to health, to prevent a recurrence, and that is a definition of the science of medicine as it exists today. Yet, in common with all other branches of human knowledge, it was only after the art of preserving the deeds and attainments of the past by letters had been invented, and tradition merged into written record, that it began to transmit to succeeding ages a definite account of its achievements and of its accumulated stores of wisdom.

The earliest records which we now possess of this primitive history of medicine are among the Egyptians and the Greeks. Possibly Greece obtained much of its knowledge from that older civilization which grew up, when the world was yet young, along the banks of the Nile; that hoary civilization which left, as its fitting monuments, the time-eaten stones of the pyramids, and the changeless face of the Sphynx, ever staring out over the drifting sands and making no sign. We know that many of the sages of Greece made voyages to Egypt in search of that wisdom, the fame of which rumor had spread about the shores of the Mediterranean. To us, however, the history of the science comes more directly from the Greeks. Among them the earliest who has left the fame of his skill as a physician was Aesculapius, who lived before the time of the Trojan war, probably in the thirteenth century before Christ. Many fables were preserved among the Greeks concerning his skill; one, that he so diminished the number of deaths that Pluto besought Jupiter to slay him, as he was materially interfering with the population of the kingdom of the dead, and that Jupiter, in compliance with the request, slew him with a thunderbolt. Possibly some of his successors have been in less danger from thunderbolts. He seems really to have died from some inflammation of the lungs. His sons, Machaon and Podalirius, following the profession of their father, were with the Greek forces, as surgeons, at the siege of Troy, in the twelfth century before Christ. One of them, Machaon, is thus spoken of by Homer, at the wounding of Menelaus, in the fourth book of the Iliad.

"King Agamemnon took the word and said,
Dear Menelaus! would that this were so,
Yet the physician must explore the wound
And with his balsams soothe the bitter pain.
Then turning to Talthybius, he addressed
The sacred herald:
                    Hasten with all speed,
Talthybius; call Machaon, warrior son
Of Aesculapius, that much honored leech,
And bring him to the Achaian General,
The warrior Menelaus, whom some hand
Of Trojan, or of Lycian, skilled to bend
The bow, hath wounded with his shaft."

Aesculapius, in the ages after his death, was deified by the Greeks, and temples, which might rather be called sacred hospitals, were erected in his honor. To these temples, or Asclepions, the sick were brought for cure, and records of their treatment compiled, so that the temples became not only hospitals, but also schools for the study of medicine. Symptoms were noted, effects of remedies recorded, students instructed, and so, in the course of succeeding years, grew up a system of medicine which from that day to this has gone on in an unbroken line of transmission and development, and the educated physician of today is the lineal descendant of the priest-physician of the old Greek temples. This combining of medicine and religion did not by any means cease with the days of antiquity. Those of us who are not very old can still recollect the circuit preacher with his saddle-bags, one side of which held his bible and a clean shirt, the other filled with his packages of simples which, upon his rounds, between the times of caring for the welfare of souls, he dispensed to the good sisters for the relief of their bodily ailments. The priesthood, and with it the knowledge and practice of medicine, seems to have been hereditary, the accumulating stores of medical knowledge remaining as heirlooms in the families of the sacred physicians, who were priests as well as medical attendants of the Asclepions. Two of these sacred hospitals were especially noted, that of Cneidos and that of Cos. At the lattter of these grew up, and was educated, the man who, more than any other, left his stamp upon ancient medicine, and many of whose writings upon medicine and surgery have come down through all the lapse of twenty-three centuries in a fair state of preservation, he it is who has been well called the "Father of Medicine."

Hippocrates, born, as his chroniclers assert, of the direct line of Aesculapius, was a man such as comes only seldom in the ages to any science. Of clear, sound judgment, untiring in his investigation and observation of disease, moderate in his opinions, and unusually free from the trammels and superstition of the age in which he lived, he gave to the study of medicine a solid substratum of reason. Hippocrates was singularly fortunate in the age in which he lived. It was an age wondrously rich in great deeds and great men. It was the age of Pericles; the culmination of Greek genius and glory; one of those eras that stand as great way-marks in the long line of human history. Let us for a moment glance at it. A few years before the first great Persian invasion of Greece had been repelled, and men's souls were still filled with the glories of Marathon. Ten years later came the second invasion of Greece, by Xerxes, with the deathless fame of Thermopylæ, and this message from the tomb of the immortal three hundred, who died that their land might live, ringing in men's souls like the clang of a trumpet,

> "Go tell the Spartans, thou that passeth by,
> That here, obedient to their laws, we lie."

And then came Salamis and Platæa, and the great deliverance, and though Athens was destroyed in the contest, it was only to arise again from her ruins more beautiful than before. Fair upon the rugged steep of the Acropolis, limned against the deep blue of the Attic sky, stood the Parthenon, rich in its marble columns and its sculptured friezes. The colossal statue of the armed Athena looked down in the glancing light of the morning sun from the rocky height, keeping guard ever over the city of her love. The Erechtheum, the temple of Nike Apteros—the wingless victory—and the noble propylæ of Pentelic marble, helped to make a fitting crown for the city lying beneath the art-crested hill. Throughout the streets and the public places, altars, and fanes, and carven marbles, told of the exquisite taste of the beauty-loving people of Attica. It was an era not alone memorable for the works of the sculptor and the architect. Greek literature was in the period of its greatest excellence. The impulsive Athenians thrilled to the pathos of the tragedies of Aeschylus and Sophocles, and smiled over the comedies of Aristophanes. Herodotus was charming the assembled Greeks at the Olympic festivals with the beauties of his histories. While Socrates, with a quaint, gentle wisdom, was teaching virtue, and discoursing to his disciples upon the text, so old and yet ever so new. How may man know himself? Maybe the cup of hemlock was, to him at least, the solution of the great mystery, and of that other mystery, whether it is better to live or to die. Not sadly, even cheerfully, he says to his judges in closing his defense, when sentenced to death, "The hour of departure has arrived, and we go our ways—I to die, and you to live. Which is better, God only knows."

Such was the age in which Hippocrates lived, the very flower, the intellectual culmination of the old Hellenic civilization. And he was not unworthy of it, nor of his contemporaries. More fortunate than Socrates, he found for the mystery of man's infirmities what Socrates failed to find for the mystery of man himself, at least a partial solution to the problem. Possessing a sound, common sense, which rejected the old belief that illness came from some anger of the gods, he cut loose from the superstitions which still cumbered the theories of disease, and, watching closely the symptoms at the bedside, searched diligently for the physical cause of the malady; and, rejecting charms and miracle cures, tried, by the use of such remedies as were then known, to remove the cause, and so restore health. There is a justness, a moderation, in his views, a freedom from hobbies, an acuteness of observation and a felicity of expression which remind one much of the writings of Sir Thomas Watson. His guiding principle was that the office of the physician is to watch nature, wait upon her, and assist her in the relief of disease. Among the remedial agents which he employed were purgatives, emetics, diuretics, narcotics, sweating, bathing and bleeding. He describes with remarkable accuracy many of the diseases which are now common in our text-books, such as fevers, dropsies, pleurisy, inflammation of the brain, dysentery and others. His clinical records of certain cases are of exceeding interest. He investigated the subject of epidemics, their connection with insalubrious localities and with unusual seasons. As a surgeon, he has left in his writings evidence of no mean skill. He describes the principal dislocations, with the methods of reduction, many of which are in use today. Fractures of the great bones he describes, with sensible directions for their management. He performed the operations of thoracentesis and trephining.

And, withal, he was an honorable, upright man, and a conscientious physician; jealous, too, for the good name of his profession, denouncing in the severest terms the charlatans who, even in that early day, infested the community, reprobating their greed, their ostentatious display, their advertising arts, and their ignorance.

[TO BE CONTINUED.]

MEDICAL NEWS.

PUBLIC HEALTH ISSUES.

THE American Public Health Association held its thirty-third annual meeting at Boston September 25-29, 1905. The territory covered by the membership of this organization embraces the United States of America, the Dominion of Canada, the Republic of Mexico, and the Republic of Cuba. The final announcement giving the program of papers, as well as the preliminary circular, indicates that the following questions were considered:

I. METHODS OF SECURING MORE UNIFORM INSTRUCTION AND CO-OPERATION IN HEALTH WORK.
  (*a*) Education of and cooperation with the general public.
  (*b*) Graduate and undergraduate instruction in hygiene in universities and medical colleges. Special diplomas in public health.
  (*c*) Teaching of hygiene to school children.
  (*d*) Instruction of present health officials. Schools and conferences for such officials with development of technical instruction for all phases of health work.
  (*e*) Present regulations or laws as to qualifications and methods of appointment for (a) executive and (b) technical officials.

II. WATER.
  (*a*) Uses of copper sulphate in public supplies.
  (*b*) Recent investigations concerning the relation of shell-fish to disease.
  (*c*) Recent experiences in water purification and protection.

III. TROPICAL HYGIENE.
  (*a*) The relation of personal hygiene to public health in the tropics.
  (*b*) Trypanosomiasis.
  (*c*) Protective measures in the work on the Panama Canal.
  (*d*) Further report on yellow fever or relationship of mosquitoes to filariasis in Cuba.
  (*e*) The anemias of Porto Rico.

IV. DISEASES COMMON TO MAN AND ANIMALS.
  (*a*) Newer developments of protective measures in Europe.
  (*b*) Protection against milk-borne infection.

V. MILITARY HYGIENE.
  (*a*) Hygienic instruction of army medical officers.
  (*b*) Their powers and duties.
  (*c*) Needed improvements.
  (*d*) Camp sanitation.
  (*e*) Sanitation of an army en route.
  (*f*) Recent sanitary experiences in the Japanese army.

VI. QUARANTINE METHODS.
  (*a*) Present-day methods for the following subjects:
    1. Port quarantine.
    2. Municipal quarantine.
    3. State quarantine.
    4. National quarantine.

VII. RECENT RESEARCHES IN SMALLPOX.

VIII. MODES OF DISSEMINATION AND RATIONAL QUARANTINE IN EPIDEMIC CEREBROSPINAL MENINGITIS.

IX. DISINFECTION.

X. SEWAGE AND WASTE DISPOSAL.
  (*a*) Garbage.
  (*b*) Trade wastes.

XI. CAR SANITATION.

THE EVENT OF THE VALLEY.

THE thirty-first annual meeting of the Mississippi Valley Medical Association will be held at Indianapolis October 10, 11 and 12, 1905, under the presidency of Doctor Bransford Lewis, of Saint Louis. The address in medicine will be delivered by Doctor Arthur R. Edwards, of Chicago, "Certain Phases of Uremia—their Diagnosis and Treatment," being the theme selected for discussion. The address in surgery will contemplate the "Present Status of Surgery of the Stomach," and will be delivered by Doctor William D. Haggard, of Nashville. The preliminary and provisional program announces the titles of about seventy papers, which will be contributed by physicians resident in Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Mississippi, Missouri, North Carolina, New York, Ohio, Pennsylvania, South Carolina, and Tennessee. Every physician in the Valley is invited to attend. Reduced railroad rates will be in effect. The Secretary is Doctor Henry E. Tuley, 111 West Kentucky street, Louisville.

MINOR INTELLIGENCE.

DOCTOR JAMES H. KENNERLY, of Saint Louis, was elected president of the National Association of Dental Faculties at its recent Buffalo meeting.

THE medical department of the University of Pennsylvania recently sustained loss by fire to the extent of $40,000. The flames originated in the anatomical and surgical departments. An invoice shows that, besides the damage done to buildings, many microscopes and other instruments were destroyed.

DOCTOR EDWARD S. WOOD, professor of chemistry in the Harvard Medical School and well known expert in the examination of human blood, recently died at his summer home at Poccasta, aged fifty-nine years. He rendered expert testimony at various murder trials, his last appearance in court being in the Tucker-Page case during the past winter.

GOVERNOR WARNER recently appointed the following board of control for the proposed State Hospital for Consumptives—four physicians and two laymen: Doctor Henry J. Hartz and Frank B. Leland, Detroit; Doctor Collins H. Johnston, Grand Rapids; Doctor Royal S. Copeland, Ann Arbor; George W. Teeple, Pinckney; Doctor Frank R. Gray, Clare.

NEW YORK is to have a new four-story emergency hospital to be known as Saint Gregory's. The institution is designed primarily to receive the overflow from the House of Relief and from various other hospitals. The corps of attendants will consist of a superintendent, assistant superintendent, three ambulance surgeons, four nurses, and two visiting surgeons.

THE legislature of Missouri has passed a bill providing for the establishment of a state sanatorium for the treatment of tuberculosis. The buildings will be situated in the Ozark Mountains at an elevation of one thousand feet above sea level. The sum of fifty thousand dollars has been appropriated for disbursement under the direction of a committee to be appointed by Governor Folk.

EDINBURGH University recently conferred the honorary degree of LL.D. on Doctor William S. Halsted, Professor of Surgery at Johns Hopkins University, and on Doctor William W. Keen, Professor of Surgery in Jefferson Medical College. The occasion was the quatercentenary celebration of the Royal College of Surgeons, and in an address Doctor Keen paid a glowing tribute to the Scottish institution, which, he declared, "the transatlantic graduates regard as their academic Jerusalem."

THE name of Fürch, the physician who established clinical laryngology on a practical basis, will be venerated shortly by the Laryngological Society of Vienna. Laryngologists throughout the world will be invited to participate in the proceedings.

A CASE of suture of a stab wound in the right auricle of the heart is reported from Harlem, New York, the operation having been done in Harlem Hospital. The subject is an Italian, who received the injury during a saloon brawl, and unassisted walked twelve blocks to the hospital. His complete recovery is anticipated.

THE Lackawanna Coal Company has established an innovation in the form of a hospital car. It was commissioned to afford prompt medical and surgical relief to injured miners, many of the mines being located at a distance from the hospitals that render timely medical aid unattainable. The car is fully equipped with modern surgical appliances and is in charge of two physicians.

GENERAL LEONARD WOOD sustained a blow upon the crown of the head about a year ago, which produced exostosis of the skull. He recently underwent operation at Saint Margaret's Hospital in Boston for removal of the abnormal growth, and is progressing toward recovery so rapidly that he will soon attain comparative good health and be ready to assume the duties of his post in the Philippines.

THE National Medical Society, an organization founded by colored physicians, convened in Richmond, Virginia, on August 22, 1905, and continued its sessions for three days. Among the social features of the occasion was a trolley ride about the city and an excursion on the Chesapeake and Ohio Railway. The meeting was held under the following officers: President, Doctor John E. Hunter, Lexington, Kentucky; vicepresident, Doctor Robert E. Jones, Richmond, Virginia; secretary, Doctor John Kenney, Tuskegee, Alabama.

THE American Association of Obstetricians and Gynecologists will hold its eighteenth annual meeting at the Hotel Astor, Longacre Square, New York, September 19, 20 and 21, 1905, under the presidency of Doctor Howard W. Longyear, of Detroit. The local committe of arrangements consists of Doctors Robert T. Morris, Samuel W. Bandler, and James N. West, any one of whom will gladly furnish information to members and guests upon application. The president's address and thirty-five papers are listed in the program.

PROFESSOR HEIN, geologist and Alpine climber, recently reported before the Swiss Alpine Club the sensation of falling from a precipice. Interference with respiration, contrary to the generally accepted idea, was not a feature of the fall. Mental activity reigned supreme, and tranquility was not infringed upon by terrorism at any stage in the descent. A panoramic view of past events was vividly portrayed to the mind, notwithstanding some of them had long been forgotten. The sensation of soothing music lulled the professor into unconsciousness without pain or shock on striking the ground.

The New Orleans yellow fever epidemic is gradually abating. Since the advent of the scourge about seven weeks ago to September 13, the number of cases reported aggregated 2,370. The total number of deaths was 319. The reported cases now average about ten a day less than the number reported a fortnight ago, but, notwithstanding the crisis has passed in New Orleans, the conditions are becoming more alarming in some of the neighboring cities, where shotguns instead of science have been called into requisition to quell the disease. The eventual victory of science is assured, however, and the fever will probably be eradicated ere the fall of frost.

Records of the recent meeting of the American Medical Association contain the information that the Section on Medicine had an attendance of 494; Section on Surgery, 443; Section on Obstetrics and Diseases of Women, 168; Section on Ophthalmology, 105. Other sections had less than 100 each, the Section on Pathology and Physiology having the smallest registration, 18. This small number may be due to the fact that registration does not always correspond to the section attended. Registration of attendance by states accords Oregon 217; California, 164; Illinois, 123; Massachusetts, 30; Washington, 156; Philippine Islands, 1. A number of states were slenderly represented, in some instances only one member being present.

The Committee on Revision of the "United States Pharmacopeia" for the period of 1900-1910 has just issued a new edition of the work. Among the noteworthy changes may be chronicled that bearing on the strength of the tincture of aconite, which has been reduced from thirty-five per cent to ten per cent; the tincture of veratrum, which has been reduced from forty per cent to ten per cent; and the tincture of strophanthus, which has been increased from five per cent to ten per cent. The changes have been instituted in order to bring about uniformity in the strength of patent remedies throughout the world, the International Conference on Patent Remedies, which was held at Brussels in 1902, having decided to adopt new standards. The changes became vogue on September 1, 1905.

Doctor Joseph P. Cochran recently died of typhoid fever in Uramia, Persia. The doctor was born in that country in 1855 but was educated in Buffalo, New York, and later returned to Persia where he has since been engaged in practice as a missionary physician. He is credited with building the first hospital in that country, and for a time was the only foreign physician in a community numbering half a million people. In recognition of serviecs rendered the Shah of Persia conferred on him a decoration which had been bestowed only twice on others than Mohammedans. He acquired considerable influence among the tribes and became a prominent figure politically as well as medically. About a year ago a fanatic murdered his colleague, a crime for which President Roosevelt demanded and obtained a large indemnity. The doctor instructed many natives in the principles of medicine and they will pursue the work he inaugurated.

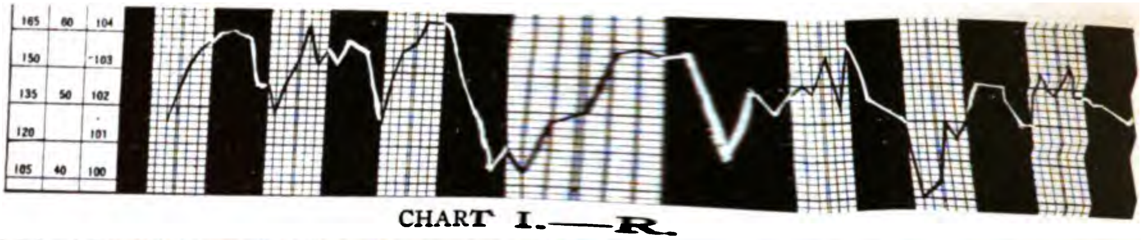
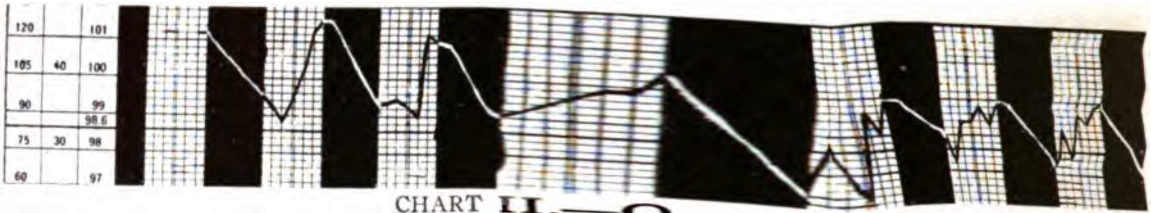


CHART I.—R.



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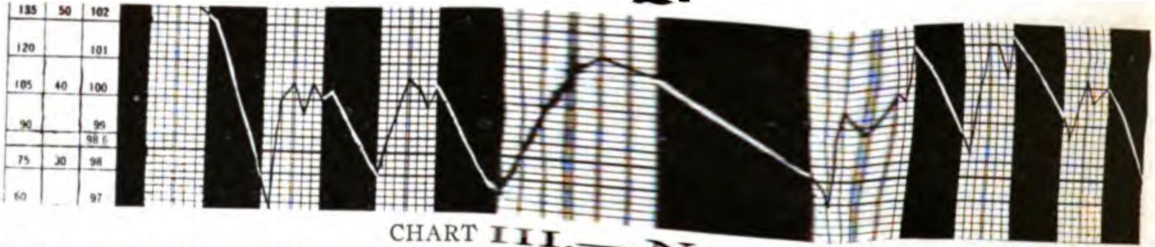

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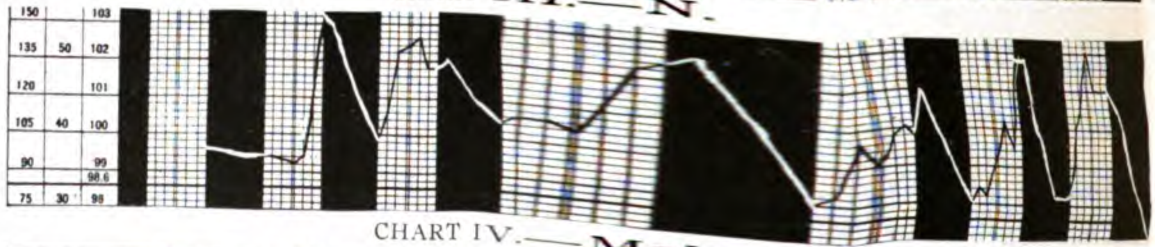

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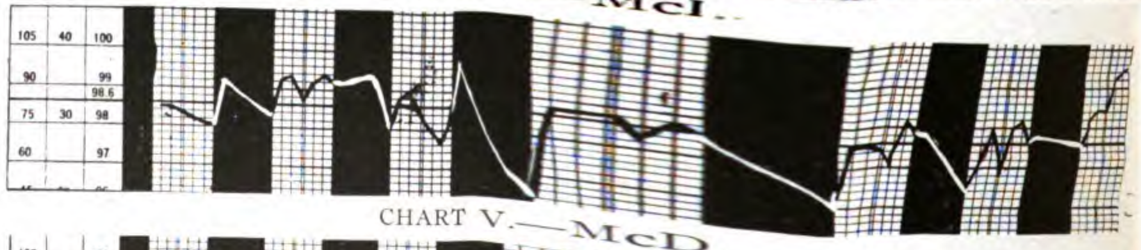

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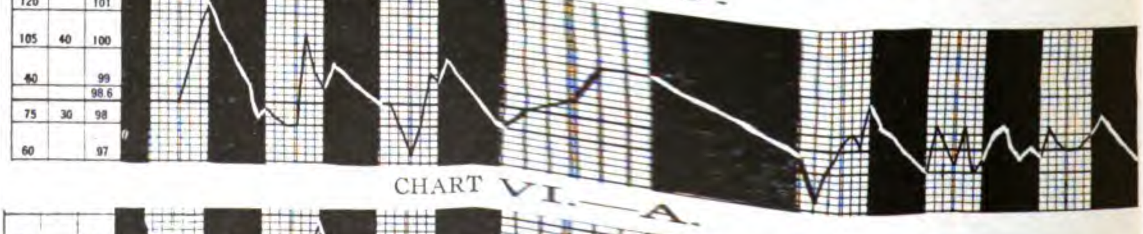

CHART VI.—A.

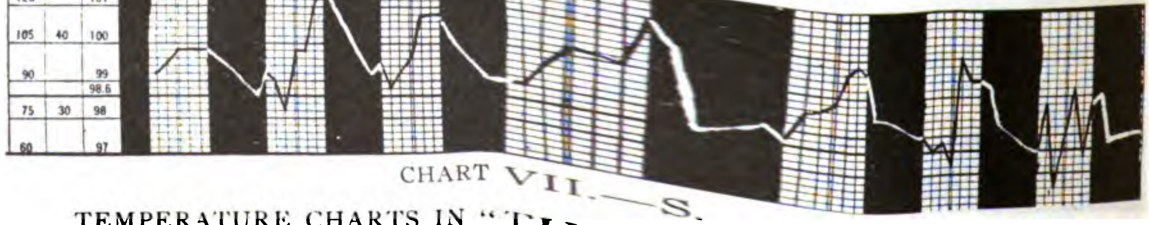

CHART VII.—S.

TEMPERATURE CHARTS IN "TUBERCULOSIS SYMPOSIUM."

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ORIGINAL ARTICLES.

MEMOIRS.

THE INDICATIONS FOR OPERATION IN PELVIC DISEASE.*

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WITHIN the past two years a young woman of about twenty-five was brought to me for examination. She was the picture of woe. So was her mother, who accompanied her. The patient at great length went into the history of her case. Aches and pains were her constant companions. Especially did she suffer from pain in the back and groins. A bimanual pelvic examination revealed a perfectly normal pelvis. Upon being thus informed the patient expressed the greatest surprise and seemed rather to doubt the accuracy of my statement. She had been treated locally for a number of months by electricity, which was administered as a last resort. If at the end of that time she was no better she was to go to a neighboring city and have her ovaries removed. Not having been relieved, naturally she was greatly disturbed over the approaching operation. Evidently here the indications for such an operation did not exist. There was no disease of the ovaries or of any other pelvic organ. The symptoms were otherwise explainable.

This is an extreme case and by no means is typical of the attitude of the general practitioner towards gynecologic surgery. However, it will serve as well as any other as an introduction to a subject which is of vital interest to us all. If we always knew when to operate or to advise operation in cases of pelvic disease, a large part of our difficulties would be solved; for the technic of pelvic and abdominal surgery has been wonderfully perfected during the past decade and a half. So much so, that it is no longer a great compliment to be called a skillful operator. Every operator worthy of the name is skillful. But to be known as a good surgeon, with all that this implies in the way of diagnostic skill and judgment, is high praise.

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*Read by invitation before the SANILAC AND LAPEER COUNTIES MEDICAL SOCIETIES.

When shall we advise operation, when counsel delay, and when absolutely interdict the use of the knife? Obviously, it will be impossible, in the short time at my disposal, to consider exhaustively the entire field of pelvic disease. At the best, I can only skim the surface of such a broad subject. However, in order that the consideration may not be entirely unsystematic, I will arrange diseases of the pelvis into the following groups:

(1) Diseases or disabilities resulting from childbirth.
(2) Inflammatory affections.
(3) Benign new growths.
(4) Malignant disease, including tuberculosis.

To these will be added a fifth and sixth group, in which are included patients suffering from epilepsy, insanity, and sterility, where the pelvis may or may not be the seat of the disease.

(1) DISEASES OR DISABILITIES DUE TO CHILDBIRTH.

(*a*) *Lacerated Cervix.*—Formerly we used to hear a great deal of the reflex symptoms resulting from the scar tissue of a healed lacerated cervix. The removal of this tissue was supposed to cure the patient. But did it? I can recall scores of cases in the old days where such a cure did not result. The scar tissue in one or both angles of the tear was removed, the scarified edges brought together and good union secured, but the patient returned in a few weeks or months with the same old symptoms. I now know that these symptoms—headache, backache, dragging pain in the pelvis, and extreme nervousness—were due to other pelvic lesions, which were overlooked. The attention was centered upon the rather insignificant lesion of the cervix, and grosser lesions of the uterus and appendages were undetected. A lesion of the cervix requiring operation is accompanied almost always by other pelvic lesions. I do not operate for this lesion alone twice a year. As an adjunct to dilatation and curettage, perineorrhaphy, and removal of diseased appendages, I perform the operation many times during the same length of time.

Should one advise the operation as a preventive of malignant disease of the cervix? Hardly, if that is all there is the matter with the woman. If the cervix be badly lacerated, with erosion and eversion of the cervical lips, I would unhesitatingly advise operation, even if there were no resulting symptoms. Especially if the patient were approaching the menopause, and for this reason. We do not know what causes cancer, but there are good grounds for thinking that irritation is one of the contributory causes. Now, cervical erosion and eversion are sources of irritation. With the proper technic, the operation may be said to be without danger. Hence I would advise the removal of this source of irritation in the cervix, just as I would advise removal of other sources of irritation in other portions of the body, where cancer is particularly liable to occur.

(*b*) *Ruptured Perineum.*—Here, too, we find this lesion usually associated with other forms of pelvic pathology. The lack of support to the pelvic floor resulting from the rupture has been followed by a prolapse or retrodisplacement of the uterus. This is usually accompanied by an endometritis, which infection may or may not have involved the appendages. Hence at the same time perineorrhaphy is performed, the uterus is dilated and curetted, the cervix repaired, and lesions of the tubes or ovaries attended to.

Lack of pelvic support from a rupture of the perineal muscles usually means backache, dragging sensations through the groins, and a peculiar kind of headache. If you ask such a patient where her pain is located, she will place her hand over the occipital region. Sometimes this pain is accompanied by a loss of memory. The patient will state that she is now unable to think, that she is afraid she is losing her mind, that she cannot concentrate her mind on her work, et cetera. Such a train of symptoms, in my experience, means a lack of pelvic support, a descensus of the pelvic organs. Inflammatory symptoms may or may not be an accompaniment If, with such a history, we find a perineal tear, operation is indicated. In fact, only through an operation can a cure result. Pessaries and local treatment, while they relieve, do not restore the patient to health.

I would not advise operation for a woman with a perineal tear which gave rise to no symptoms, unless such a tear is accompanied by a rectocele, a cystocele, or both. In the presence of these latter conditions I would advise operation as a prophylactic measure against partial or complete procidentia uteri, which is liable to occur after the menopause has left the pelvic tissue toneless. Relaxed vaginal outlet, due to a perineal rupture, is comparatively easy to cure by operative means. Where the prolapse has become marked and there is a veritable hernia of the pelvic organs, complete and permanent cure by operation is by no means a simple matter. Hence the advice to submit to operation, even when there are no marked symptoms, as a prophylaxis against a future condition which will inevitably give rise to pain and discomfort.

(2) INFLAMMATORY PELVIC AFFECTIONS.

For our purposes it will be best to divide inflammatory disease of the pelvis into two groups, acute and chronic.

(*a*) *Acute Infections.*—These, in turn, may be subdivided into nonpuerperal and puerperal pelvic inflammation. It is well at the outset to bear these distinctions in mind, since the indications for and the nature of the operations for the two kinds of disease are apt to vary. In the great majority of cases acute nonpuerperal inflammation is due to the gonococcus. This is not true in every instance, but so common is this etiology that we are justified in assuming that such is the case, until our suspicions are not confirmed by the microscope.

The symptoms of an acute pelvic infection are familiar to you all. Beginning in the endometrium, the infection spreads by contiguity and by the lymphatics, until the appendages and adjacent peritoneum are involved. The entire pelvis may be a mass of exudate. Nature protects the healthy peritoneum by throwing out around the diseased tissue vast quantities of plastic lymph. So long as the healthy tissues above are thus protected, general peritonitis will not result and the woman will not die of sepsis. This gives us a clue to the proper treatment for these acute pelvic inflammations. Open and drain pus collections, but in such a manner as to leave this protective lymph wall intact. This can best be accomplished by vaginal incision and drainage. A laparotomy and the contamination of healthy peritoneum is contraindicated in this class of cases. The woman may be suffering intensely. Her temperature may be high, the pulse rapid, and she may exhibit every indication of septic absorption. Still, if the pelvis be shut off from the general abdominal cavity, she is in no danger. Wait till the pus points low down in the pelvis. Then make a liberal transverse incision in the posterior culdesac and evacuate the pus.

The same indications for treatment hold good for cases of pus in the pelvis, due to acute puerperal infection, only in this class of cases it is of even greater importance to avoid contamination of the healthy peritoneum. Here the infectious agents are virulent forms of streptococci or staphylococci. As far as local conditions are concerned the same walling-off process takes place. Wait until such an abscess points, then open by the vaginal route. Of course, there is more danger of absorption into the general circulation in the puerperal than in the nonpuerperal cases, for we are dealing with organisms of greater virulence. Still, the absorption does not arise from the walled-off pus products outside of the uterus, but rather from the septic endometrium. If the condition of the patient becomes alarming, it is best to remove septic foci from the interior of the uterus, unless this has already been done. But nothing is to be gained in the way of stopping the infection by operating through the suprapubic incision. A failure to recognize this fact has been responsible for many deaths, where the patients could have been saved by less radical procedures.

The difficulty has been that too many times acute puerperal collections of pus in the appendages have been placed in the same category with recurrent subacute or chronic pus-tubes or ovarian abscesses. The pus in the latter class of cases is usually sterile. It is perfectly possible to remove radically such diseased appendages from above, and not set up a general peritonitis. Healthy peritoneum can be bathed in this kind of pus, still, if a proper toilet be instituted, no reaction will result. Yet even here, once in a while, one of the cases of recurrent localized peritonitis with pus appendages will fool us. We open from above with the same confidence, yet the patient dies from a general infection. Hence, even in the subacute or chronic pelvic pus collections, I believe the safest procedure is to open freely and drain from below. If this does not cure, the radical operation still remains to be tried. It may not be such brilliant surgery, but out of a hundred cases more lives will be saved. They say a man grows more conservative as he grows older. This may be due to lessons taught by experience, and not to the years. I speak from the standpoint of one who has seen the errors of his ways. At one time I thought it was almost a crime to open a pelvic abscess from below. It was considered at that period dirty, incomplete work. Bold radical removal was the thing. Yes, and many patients recovered, but some of them died. Today similar cases are being saved by less radical procedures.

Remember, the pelvis may be filled with pus, the omentum, intestines, and pelvic organs glued together in one mass, still your patient may not be in a critical condition as regards life and death. A pelvic abscess rarely breaks into the general peritoneal cavity. Stand ready to assist, not to handicap, nature. Open up the abscess at its most dependent point, feed up the patient and then, if necessary, perform the radical operation.

(3) BENIGN NEW GROWTHS.

(*a*) *Ovarian Cysts.*—The indications for operation are plain as soon as the nature of the growth is determined. Nothing is gained by delay. Much may be lost. More careful microscopic examination is showing that a greater percentage of ovarian growths is malignant than formerly was supposed. This alone is reason enough for early removal. Only the other day I had a sad interview with a lady upon whom I had operated twice. Through a dread of operation she had allowed an ovarian cyst to reach a large size. Its contents had ruptured and the abdomen was filled with large quantities of colloid material. The parietal peritoneum, intestines, and liver were covered with semi-malignant partially organized masses. Thorough removal and washing out of the cavity gave the patient a year's good health. Then the disease returned. Another laparotomy and removal of a large jelly-like tumor of the omentum gave temporary relief. Now I am obliged to tell this patient that nothing more can be done for her. Can anything be sadder than such a history? Possibly an earlier operation might have entirely removed the disease. Then again, ovarian growths are very liable to accident. Twisting of the pedicle is very common, and the mortality from this complication is very high. Rupture of the cyst from proliferation is not uncommon. Suppurative changes in the cyst carry with them high mortality. From every standpoint, the indications for operation and early operation are clear.

(*b*) *Fibroids.*—The indications for operation are by no means so clear when it comes to the treatment of these growths. The life histories of the two growths are quite different. The ovarian disease is progressive, and death results without operation in a comparatively short time. Uterine fibroids act more indirectly through complications and pressure upon other organs. In contradistinction to ovarian cysts, only a certain proportion reach an immense size, some may cease growing, and some may even diminish in size. What, then, shall be our advice to patients with uterine fibroids? Shall we operate in every case? Shall we advise waiting until after the menopause, in the hope that the tumor will cease growing? Shall we advise waiting for the advent of acute symptoms, inflammation, hemorrhage, pressure symptoms? In order to answer these questions we must have certain facts in our possesion. Do the tumors cease to develop at the time of the menopause? How frequently do we meet with complications? Operated upon early, what mortality does the removal entail? The more I see of uterine fibroids the greater respect I have for them as regards the damage they can do their possessors.? They are not the simple tumors we have been accustomed to consider them. You may say that you have known women who have had these tumors for years without any symptoms from them. That is true, but that does not solve our problem. I know of women who carried the products of an extrauterine gestation for years without any symptoms. That does not prove that we should not operate for extrauterine pregnancy. In a hundred cases of fibromata there will be a large percentage of cases which will give rise to symptoms. There will be frequent and debilitating hemorrhages. There will be pain from pressure of the growths upon neighboring organs, and a certain proportion of cases will be complicated by inflammatory disease of the appendages. A certain percentage of the tumors will become malignant. As a rule they do not cease to grow after the menopause. In fact, some of them take on a more rapid growth at this time. My personal opinion, gained from an experience of a number of hundred cases, is that they are a source of danger to the patient and that they should be removed whenever they produce symptoms. Only one thing would militate against this opinion: Will more women be saved without than with the operation? I can only answer this by reference in a general way to my own results. My mortality rate in my last one hundred cases has not been above three or four per cent. More than this number of women would have died without the operations. In fact, if the surgeon can get such tumors early, before complications set in, the mortality should be no greater than for ovarian cysts. This is only from the standpoint of mortality. When we consider the relief from suffering, physical and mental, brought about by the operation, we are all the more in favor of operating upon a large percentage of such cases.

(4) MALIGNANT DISEASE OF THE PELVIS, INCLUDING TUBERCULOSIS.

(*a*) For operations in general the indications are clear, when we have to deal with malignant disease of the pelvis. The only hope is in operation. So, always operate so long as the disease exists and can be ameliorated by such a procedure. Never resign a patient to her fate because you cannot radically remove the disease. In carcinoma of the uterus, where the disease has advanced beyond the limits of the organ, remove all the disease you can with the curet, and follow up such treatment with powerful caustics or the actual cautery. Never take away the patient's last hope. Do not deceive her, but never actually say there is no hope. Such palliative measures will do much for these unfortunates. The foul discharge and hemorrhage will cease for a time at least. The patient will become less septic, will put on flesh and may be rendered more comfortable for many months.

Obviously every operative procedure for the cure of malignant disease will be more effective the earlier the patient comes to operation. Remove scrapings from every suspicious case of uterine disease and subject them to careful microscopic examination. Do not wait for the appearance of foul discharge, hemorrhage and pain. By that time it will be too late for any radical procedure.

As regards the particular operation for malignant uterine disease, I am gradually giving up the vaginal route and turning more and more to the removal of uterus and appendages, together with the pelvic lymph glands by way of the abdomen. This operation is still *sub judice*. But at least it seems to be an advance. If we can overcome the additional shock entailed by the extra time required for the operation, the results may be far and away above the old radical operation.

(*b*) *Tuberculosis.*—In the presence of this disease we should be as radical as possible and as early. When tubercular peritonitis arises from tuberculosis of the appendages, the abdomen should be opened and the ascitic fluid evacuated. If the patient can stand the shock of a removal of the appendages, this should always follow. But we must remember we are dealing with a patient weakened by a very debilitating disease. Such patients do not stand well the additional shock of removal of the appendages and uterus, especially if these organs be plastered down in the pelvis by lymph deposits. It is much better to open, evacuate the fluid, and wait a while before the more radical procedure. The mere opening of the abdomen does wonders for these patients.

I do not advocate an abdominal incision where the abdomen is filled with tubercular masses without an ascitic accumulation. Operation does very little for these dry cases. The patients will live longer if they are left alone.

If there is reaccumulation of the ascitic fluid, operate again. Recovery may ensue after a number of such operations.

(5) EPILEPSY AND INSANITY.

Epileptics and the insane with pelvic disease should receive the benefits of surgery. But never operate with the idea that there is any particular relation between the genital organs and these diseases. Quite a number of times during the year epileptics come or are brought to me for the purpose of having normal ovaries removed in order to cure them of the convulsions which come only at the menstrual periods. Removal of the appendages will not cure them of the attacks. Whether it would be better to spay all epileptics is an entirely different question, which does not come within the province of this paper. Still, it may be well to state in passing that probably the time is far distant when such a procedure will be considered advisable. It may be a desirable thing to castrate all inveterate criminals, but I do not believe it will ever be done.

(6) STERILITY.

Here again the indications for treatment are clear. If there be disease, operate for its cure, with the hope of overcoming the sterility. But do not propose dilatation and curettage where there are no symptoms, with the idea of opening the uterus so that the spermatozoa can get in. If the menstrual fluid can get out, there need be no worry about there being an opening large enough for the spermatozoa to pass in. This is a many-sided problem, and I have only touched upon it because so many patients come to me who have been advised to undergo a dilatation and curettage for an absolute or relative sterility, where there existed no indications for such a procedure.

I am aware that I have made a hasty and far from satisfactory review of my subject. Still, if a thought or two has suggested others to you, I am more than repaid.

A SYMPOSIUM ON TUBERCULOSIS.

The following papers were read at a symposium on tuberculosis by senior students in the medical department of the University of Michigan who formed the "Tuberculosis Club," that is, those who had the case-taking and observation of tuberculosis patients treated in the Medical clinic during the year (1904-1905).

The following is a list of members with the titles of their papers:

James Ross Reed, A. B.: "Early Signs of Pulmonary Tuberculosis."

Lee Bey Greene, B. S.: "Cough in Pulmonary Tuberculosis."

Howell Llewellyn Begel, B. S.: "Fever in Chronic Pulmonary Tuberculosis."

Vene Duane Farmer: "Diazo Reaction."

Roy Alton Brown: "Diagnostic Value of Tuberculin."

John Alphonso Mason: "Complications of Pulmonary Tuberculosis."

Robert Osborne Beakes: "Sanatorium Treatment of Tuberculosis."

Hubbard North Bradley, A. B.: "Home Treatment (non-medical) of Tuberculosis."

William Edwin Barstow: "Diet."

George W. Green, A. B.: "Tuberculin and Antistreptococcus Serum."

Fred McKenny Ruby: "Symptomatic Treatment."

The topics were assigned by the students, who also did all the work. In selecting for publication the four following papers, I have been guided chiefly by the interest of topics that do not require extensive personal experience in practice, and that are of general application. All were well done and showed great interest in the subject and an intelligent use of recent literature.

George Dock.

FEVER IN CHRONIC PULMONARY TUBERCULOSIS.

By HOWELL LLEWELLYN BEGEL, A. B.

THE standard text-books of medicine emphasize the importance of the symptom, fever, in chronic pulmonary tuberculosis, not so much because of the deleterious effects which it exerts upon the patient, but because of the information that it imparts to the physician of the condition with which he deals.

In giving the principal facts with regard to fever in phthisis, as I have ascertained them, I shall endeavor to point out in what way an observation of fever is of value to the physician in the diagnosis, prognosis and treatment of chronic pulmonary tuberculosis; and it will be profitable to illustrate and apply these facts to temperature charts of patients who have been before the class this year affected with this disease.

There is no characteristic type of fever in chronic pulmonary tuberculosis, and the impression of some, which I confess to have had myself, is not true that a hectic or intermittent fever is the only type of fever associated with this disease. Fever in phthisis may be continuous, remittent or intermittent in character, and each type may occur either late or early in the disease. A complete temperature record of a case will show not only both remittent and intermittent types, but also quiescent intervals in which fever is absent.

The first temperature chart that I wish to show illustrates what is meant by remittent fever. The chart is that of the colored patient, R., now in the hospital. The curve has been plotted from temperature observations taken every two hours during the day. Rising with irregular fluctuations to 103°-104°, between 6:00 and 8:00 o'clock in the evening, the temperature falls to 101°-102° in the morning. Observe that at no time during the twenty-four hours is the patient free from fever, the curve failing to reach or cross the line of normal temperature. This is a distinguishing feature of the remittent type.

The chart of the patient Q., who was in the hospital in March, also illustrates the remittent type of fever, only for the first three days, however, as after that time, outdoor treatment apparently changed the character of the curve. The temperature curve in this case has a lower range than that of R., the evening rise reaching 101°-102°, the morning decline about 99°.

I believe it to be true that a hectic or intermittent fever is the most frequently encountered type in chronic pulmonary tuberculosis. In a general hospital where most of the tuberculous patients are in advanced stages, it is by all odds the most common form. In looking over something like sixty temperature charts of patients that have been in the University Hospital, I have met with an intermittent type of fever in thirty, a remittent type in twelve, continuous fever in one, and afebrile periods in fifteen. Intermittent fever differs from remittent fever in that the morning remissions are of greater extent, and, as a rule, sufficient to reduce the temperature to normal. For several hours in the morning, therefore, the patient may be without fever. An intermittent fever persisting in spite of treatment presents a temperature curve that becomes monotonous to the eye from its regular rise and fall.

The temperature curve of the patient, Q., is intermittent in type after the fifth day, although, as I have pointed out, remittent in character before that time. Better illustrations, however, of intermittent fever are afforded by the curves of N. and McL., patients before this clinic last fall. In both are observed the characteristic evening rise and morning fall with fluctuations peculiar to each.

Certain writers describe an inverse type of intermittent fever with the rise in the morning and the fall in the evening. It is stated that this is rare; I have met with it in none of the charts that I have examined.

A feature of considerable importance in the temperature charts of tuberculosis patients is the presence of subnormal temperature. By subnormal temperature is meant a temperature between 98.6° and 96°; a collapse temperature is one below the latter limit. Turning our attention again to the temperature charts, we observe that the temperature curve of McL. keeps well above the line of normal temperature 98.6°, that the curve of N. frequently crosses the line, while the curves of both McD. and A. are, on the whole, as much below the line as above it. In N.'s case, during the last four days, there are morning remissions to 96.8°, 97.2°, 97° and 95 respectively, the last being a collapse temperature. The patient died during the evening rise, following, of pneumothorax, as shown by the postmortem. The temperature curve of McD., it seems to me, is of particular interest. The average daily temperature in the morning is about 97.5°, in the evening 99.5°. There are, I think, two ways of interpreting this curve. If we consider the normal temperature of this patient, who was in a debilitated condition, to be at 97.5°, at which point the morning temperature tends to be maintained, then the patient has an intermittent fever with an evening rise of two degrees. If, on the other hand, the normal temperature is 98.6°, an evening temperature of 99.5° hardly amounts to fever, and we have to consider a temperature curve not indicative of fever.

In but one temperature chart examined, have I met with a continuous type of fever, and in this case the fluctuations were suggestive of remissions. Continuous fever is rare in chronic pulmonary tuberculosis; it is the rule in the acute miliary forms.

Bearing in mind these features in the fever of chronic pulmonary tuberculosis, what may be the value in diagnosis of a series of temperature readings, properly observed and recorded? In most of the cases that we have had this year, fever has been but one detail in the picture of a condition easily recognized. There are cases, however, and there have been a number before us this year, in which fever furnishes valuable diagnostic data. Such, I should say, are incipient cases, cases in which tubercle bacilli cannot be found in the sputum, cases without cough or without sputum, latent cases and those in which the complaints are vague in character, such, for instance, as loss of weight, pain in the chest, diarrhea or general weakness. I recall one patient who was before us complaining only of stomach trouble, in whom extensive tuberculous processes in the lungs were found. I am not aware in this case that an observation of the temperature chart called attention to the true condition, but such might easily have been the fact.

Pulmonary tuberculosis not infrequently gets a start in a patient convalescent after an infectious fever; at such a time the temperature curve may suggest this sequel. The patient, S., who was in the hospital with pleurisy a few weeks ago, had an intermittent temperature curve at a time when the physical signs of his pleurisy had largely cleared up. The observation of this fact was sufficient reason for careful examinations, from time to time, of the patient's thorax. In S.'s case the intermittent fever was not accounted for. After bronchitis, pneumonia, pleurisy, influenza, measles, or whooping-cough, remittent or intermittent fever needs investigating. A new infection in form of suppuration will most often account for the persistence and character of the temperature curve, and in determining the locality, the lungs are deserving of careful scrutiny.

Let us now consider, briefly, the prognostic importance of fever in chronic pulmonary tuberculosis. Numerous writers have attempted to describe the character of the pathological processes in the lung from a study of the temperature curve, consequently we read of fever of tuberculization, fever of absorption, fever of caseation, and fever of pneumonic inflammation. While the tuberculous process is too complex to admit of such fine distinctions being drawn from an observation of the temperature curve, we are able to draw a number of general conclusions bearing on the pathology of the condition:

(1) A continuous temperature curve is associated with a rapidly active progressive tuberculous process with an extension most likely by contiguity.

(2) The remittent type of fever in phthisis is the result of an active progressive tuberculous process, with an extension, most likely, by contiguity.

(3) The intermittent type of fever is associated with a mixed infection with suppuration.

(4) Subnormal temperatures are evidence of weakness and debility; collapse temperatures of failure on the part of the patient to react to the injurious agent.

Bearing in mind these general principles let us apply them to the temperature charts and collect what data we can of prognostic importance.

In the first place, consider the temperature curve of R. Here we find a high remittent fever which has persisted in spite of treatment since the patient entered the hospital two weeks ago. All authorities agree that such a fever is of bad prognostic significance. In such cases progressive weakness goes hand in hand with the fever.

Likewise of bad prognostic significance are the temperature curves of N. and McL. Both present high intermittent types, not responding to treatment. In the case of McL. the fever persisted for the seven weeks that the patient was in the hospital. Compared with N.'s chart, there are few subnormal temperatures in the chart of McL., which perhaps is a point of relative favor in the latter case. Intermittent curves, not responding to treatment, point in time to exhaustion, amyloid disease, or both, as a result of the associated suppuration.

You recall the patient who left the hospital but a short time ago. For fifteen or twenty years he had had this disease, and an examination in this clinic showed marked physical signs. When the patient entered the hospital, he had a high intermittent fever. It disappeared promptly when the patient was put upon rest and outdoor treatment. The temperature curve furnishes favorable prognostic data in this case, a statement coinciding with a remark of Doctor Dock in the clinic, to the effect that in the absence of serious symptoms the fact of the patient having lived fifteen or twenty years with the disease was reason for thinking that he might live many years yet.

The charts of the patients A. and McD., as pointed out, show slight or no fever but fluctuating curves with subnormal temperatures. The prognosis in neither case is to be considered especially favorable. The fewer the fluctuations and subnormal temperatures, and the nearer the curve can be made by treatment to approach the normal curve of health, the better the prognosis.

Finally, the temperature curve of a patient with chronic pulmonary tuberculosis is of value in treatment, in that it is the best index of the patient's progress. When fever is present, exercise is prohibited in all cases. During afebrile periods, exercise is prescribed, the amount being regulated by the reaction of the temperature curve. If, after a walk of thirty minutes, a patient without fever returns with an elevation of temperature of one or more degrees, his exercise has been excessive and must be reduced in amount. Likewise attention to diet, digestion, sleep and the general hygienic welfare of the patient, in a patient with a fluctuating temperature curve, may often result in a curve more closely approximating the curve of health.

The question of the relative accuracy of the mouth and rectal temperatures has been much discussed of late in connection with the value of temperature as an index to the amount of exercise to be prescribed. Without entering the discussion, it may be safely said that if reliance is placed on mouth temperatures, it is necessary that the observation be made with care, and that the thermometer be left a sufficient length of time in the mouth to offset any temporary cooling to which the mouth is liable.

In the treatment of the fever, antipyretics are a last resort. Rest in bed out of doors is the essential, to be supplemented by a nutritions diet, hydrotherapy, and other measures tending to advance the personal hygiene of the patient.

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THE USE OF TUBERCULIN AS A DIAGNOSTIC AGENT.

By ROY ALTON BROWN.

Since the discovery and introduction of tuberculin by Koch in 1890, there has been much said for and against its use as a therapeutic and diagnostic agent and it may be of interest to review the subject in a brief manner, considering particularly its use as an aid in diagnosis, both as to its reliability and the method of its application.

When first brought to the attention of the profession it was considered as a panacea for nearly all conditions and was used not only as a diagnostic agent for the discovery of the presence of tuberculosis but also in the treatment of the same, as well as in that of sarcoma, actinomycosis, syphilis, and many other diseases. It was naturally soon brought into disrepute by many because of its failure to do what had been claimed for it.

It was shown that all men, tuberculous or not, react if the dose is large enough and many of the early tests failed because of the large amounts used; some investigators using as high as twenty to thirty milligrammes, which not only produced in practically healthy persons a temperature often ranging from 103°-105.5°, with intense headache frequently accompanied by nausea and vomiting as well as backache, chills, and general discomfort, but also defeated the very purpose of the test.

In 1891 Virchow claimed from the examination of pathological specimens from persons recently treated with tuberculin, that the serous membranes showed recent tuberculous nodules which seemed to him to have been formed after injections of tuberculin. As there were only twenty-six cases in his series, he was limited as to his conclusions, and, furthermore, they were all treated with repeated large doses. In the same year some of Virchow's pupils gave reports which seemed to bear out his statements. Grawitz, experimenting on monkeys, seemed to prove it; Bardenhauer reported cases to the German Surgical Congress supporting this contention; Mikulicz thought tuberculin harmful unless used with great care, but, on the whole, seemed in favor of its use; Von Leyden reported two cases with long continued fever.

The question arises, is tuberculin a reliable aid in diagnosis? It is generally conceded that less than two per cent. of tuberculous patients fail to react to the injections, but it has been claimed to react in other conditions and at times to be misleading. Madison, in *American Medicine*, 1902, Volume IV, page 972, reports a case in which positive reaction was obtained but no tuberculous lesions were found postmortem. In "Johns Hopkins Hospital Reports" for 1903, page 535, Tinker mentions a case in which the test was misleading, where a patient suspected to have tuberculous peritonitis and the mass thought to be rolled up omentum proved to be, at operation, carcinoma of the stomach; but postmortem it was found there were unsuspected tubercles in the lungs.

Elder, in *Montreal Medical Journal,* 1901, Volume XXX, page 759, gives two cases of tuberculous peritonitis which did not react to the injections. Kossel reports on injections made in children, in some of which there were found postmortem to be latent unsuspected tubercles in the mesentery. Von Leyden reports that in his control injections most of the cases did not react but in some reaction occurred where tuberulosis was absolutely not to be suspected. Von Bergmann reported cases of actinomycosis and sarcoma which reacted, but he admitted the possibility of latent tubercles. Kalendro and Babes reported two cases of leprosy which had reactions lasting several weeks after tuberculin. Most of these reports were made in the first years of the use of tuberculin and most of the observers have apparently not continued their observations as to whether they were correct or not.

There is a case of tuberculous abscess reported by Tinker, in which tubercle bacilli were demonstrated, but which failed to react after several injections. Von Leyden reports a case in which postmortem examination showed advanced tuberculosis but which gave no reaction.

There are three recognized standard tuberculins on the market now: Koch's original tuberculin made from the filtered cultures of the tubercle bacilli; Koch's tuberculin R made from a trituration of the ground up bacilli; and Trudeau's tuberculin made by a modification of Koch's original method. Tuberculin R has been shown to be unsafe as a diagnostic agent. Trudeau's tuberculin is a weaker product than Koch's original, it requiring about three milligrammes of the former to give the same reaction as one milligram of the latter. The crude tuberculin will keep indefinitely but it must be used diluted and the diluted forms are not reliable after forty-eight hours.

Before beginning the test the patient's temperature should be taken every two hours for at least twelve to eighteen hours, preferably twenty-four hours, to determine if the temperature is running above normal. Some of the reasons given for failure of the tests are because this precaution was not carried out; the rise of temperature being due to other causes as septic or malarial processes. Patients do not react within six, eight or ten hours after the injections. Anything above 99° is considered to contraindicate the test; a small elevation of temperature may be brought down by rest in bed for a few days.

The area in which the injection is to be made should be cleansed with soap and water, alcohol and ether, and the injection made deep into the muscles, as tuberculin is irritating. The dose varies with the make of the tuberculin. It is better to begin with small doses and increase, as for instance, three milligrammes of Trudeau's is taken as a minimum dose and if no reaction follows it is increased to six or nine milligrammes. Larger doses are uncomfortable to the patient and if the reaction can be obtained with smaller doses it is better for the patient. Here in this hospital Koch's original tuberculin is used, the minimum injection being one milligram, followed by five to ten milligrammes, if reaction fails.

The typical reaction depends first upon the elevation of temperature with a rather characteristic curve. It usually begins to rise in about ten hours, in many cases the rise is preceded by a drop of two or even three degrees. It then rises rapidly for six to eight hours; when the height of the curve is nearly reached it rises slowly for two to four hours to the maximum when it falls slightly for two to four hours, and then falls quite rapidly for four to eight hours, the fall, however, being slower than the rise, and frequently there is some slight elevation of temperature for forty-eight hours, after the injection. With the elevation of temperature there is usually some headache, generally slight, sometimes severe; frequently there is backache and general discomfort. In marked reactions chills may precede the rise in temperature, accompanied by nausea and vomiting and occasionally diarrhea and abdominal pain. In the case of tubercles in the lung important changes occur, such as alterations of breath sounds, râles, or change of percussion note.

Children seem to require larger doses than adults in order to get the reaction; the temperature is apt to go higher than in adults. Otherwise there is no difference. Sex seems to play no part. The general condition of the patient has little influence, as delicate persons react no more violently than stronger ones. In patients with healed lesions the reaction is obtained.

A tolerance is soon obtained for tuberculin if used in repeated small doses so that it will require many times the original dose to bring out the reaction; but one is not apt to meet this in his diagnostic work unless the patient has been treated with tuberculin.

Many theories have been advanced as to the cause of the reaction, but probably as plausible as any is to consider the foci of disease as large test-tubes containing toxins which are slowly given off to the blood. The body cells become accustomed to handling so much toxin but when a few extra milligrammes are introduced it overtaxes the body cells with the resulting phenomena. Other theories are that new foci of disease are excited: and that tuberculin sets free toxins already existing in the body.

Most of the writers in the early nineties regarded very highly the use of tuberculin as a diagnostic agent while many in recent years have condemned its use. Perhaps Trudeau in this country is the best authority upon the subject, and in the *Medical News* for May 29, 1897, he says that before condemning it as at fault when a reaction occurs in apparently healthy persons, it must be remembered that from thirty to forty per cent. of such cases on coming to autopsy show latent tubercles. He also emphasizes the importance of studying the temperature for several days before the injection is made. Do not use the test when there is an elevation of temperature and use small doses.

Nearly all the Germans favor its use and look upon it as the best and safest means for early diagnosis in tuberculosis. It has come into disuse more because of its employment in unsuitable cases; the use of too large doses; and in cases whose temperatures had not been normal for twenty-four hours. Prejudice of patients and of physicians has brought it into disrepute.

Heron, in the *British Medical Journal,* 1901, Volume II, page 212, says that from observations in two thousand cases he had never seen evidence in favor of Virchow's statement that bacilli were set free by the injections. Koch stated that from observations in three thousand cases he could say that if properly used the injection is without danger and as a diagnostic agent is almost absolute.

France, in *British Medical Journal,* 1901, Volume II, page 313, reported on cases in which injections were made in twenty patients free from tuberculosis where no reaction occurred; in fifty-five cases suspected, forty-five reacted, thirty-four of which have since died, and in twenty-nine on whom autopsies were performed, tuberculosis was found in all. Of eleven still living the diagnosis of tuberculosis is not positive in six. He concludes that the test is of the utmost value.

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SANATORIUM TREATMENT OF TUBERCULOSIS.

BY ROBERT OSBORNE BEAKES.

THE fundamental principles upon which the modern sanatorium treatment of tuberculosis is based have been known for centuries but only within the last few decades have they been systematically employed.

In 1873 Doctor Edward S. Trudeau, suffering from tuberculosis and hoping only to prolong his life, passed the summer at Paul Smith's, in the Adirondack Mountains, and finding his condition so greatly improved decided to pass the winter in that then isolated place, the nearest railroad being forty-two miles distant. As he continued to improve he began to turn his attention from the cure of himself toward the cure of others suffering from tuberculosis, and having secured the aid of Doctor Alfred Loomis and others, the first cottage containing but a single room was completed in 1884 at Saranac Lake, at a cost of $350. Thus was established the first sanatorium for working men and women in America.

The results of treatment at this and other sanatoria have been so satisfactory that today several of the states have public institutions for the care of their tuberculous patients, and the movement is being actively agitated in many of those states which do not already possess them. The object of these institutions is to offer to persons in the early stages of tuberculosis, who could otherwise ill-afford a residence in the country, "a well-regulated out-of-door life amid hygienic surroundings, a nourishing diet, and symptomatic medicinal treatment." "What we ask," said Doctor John H. Pryor, of Buffalo, "is that the consumptive shall be taken care of at the right time in the right place until he is well, and not at the wrong time and in the wrong place until he is dead."

It seems to be established that climate is of secondary importance in the treatment of tuberculosis, except that it be of such a nature as to allow the greatest number of hours spent out of doors without undue exposure. Brehmer held that climate is not the chief factor in the treatment, that the patient is not injured by exposure to sudden changes of weather provided he is accustomed to it, and that it is not so much *where* the patient lives as *how* he lives that is important. Doctor Flick, of Phipp's Institute, Philadelphia, states that climate has nothing to do with the cure. A climate should be selected that offers the greatest number of sunny days consistent with easy access by those whom it is sought to benefit. No climate is a specific. The surroundings should be hygienic and the scenery pleasing.

A site having an elevation of from one to two thousand feet above tidewater is usually selected. The Saranac Lake Sanatorium is sixteen hundred feet above sea level, the Loomis Sanatorium, at Liberty, New York, twenty-three hundred feet, and the Massachusetts State Sanatorium, at Rutland, Massachusetts, has an elevation of twelve hundred feet.

A southern slope should be selected for the building, proper attention being given to drainage and the securing of a pure water supply. The grounds should comprise several hundred acres. The sanatorium buildings usually consist of an administration building, containing the dining room and offices, about which are grouped the cottages occupied by the patients and an infirmary for those requiring special nursing. In addition there is usually a chapel, library and club-house, beside the private residences of the physicians and superintendent. The cottages are constructed in such a manner as to secure the most perfect ventilation. The sleeping rooms generally face the south, thus flooding with sunshine and protection from the northerly winds being secured. Lean-tos are built in connection with many of the cottages. These are shed-like structures, open upon three sides and facing the south. They vary in size from those accommodating one or two beds to those sufficiently large to accommodate eight or ten beds. Here those among the patients who have accustomed themselves to the rigors of the northern winter sleep throughout the year, protected from the severity of the winter nights by additional coverings of blankets or furs. At some sanatoria the old arrangement of tent life is still in vogue.

The grounds are divided into attractively laid-out parks, pasturage, and cultivated land upon which the vegetables and fruits from which the table is supplied are grown. The patients are not, as a rule, allowed access to the pasture lands.

It is aimed to receive only such patients as present a fair outlook for recovery. This does not always mean that none but incipient cases are taken, for it has been found that frequently cases of long standing are susceptible of improvement and a limited number of these advanced cases are usually admitted. It also frequently happens that an advanced and incurable case arrives which must be cared for, although such cases are usually excluded by the rigorous examination of an examining physician before the patient leaves his home. In some instances a healthy member of the family or friend is allowed to accompany the patient.

The patients at the state institutions come from all classes of society—some from the professions, many are wage-earners and other are extremely poor. Those who are able to pay usually do so—from five to seven dollars per week, while those who cannot pay are supported by the state or by the city or township from which they come. During the year ending September 30, 1904, eight hundred and seventeen patients were admitted to the Massachusetts State Sanatorium, at Rutland. The New York Sanatorium, recently opened at Ray Brook in the Adirondacks, will also accommodate a large number. Such sanatoria as "The Loomis," at Liberty, New York, in the Catskills, accommodate patients largely from the well-to-do classes who can afford to pay as high as thirty-five dollars per week, although a limited number are also accommodated, in the annex, at five dollars per week.

The discipline is simple but rigid. Patients are obliged to be out-of-doors as much as possible. Smoking and drinking are forbidden and expectoration is strictly regulated. The hours for retiring and rising are fixed and exercises, suitable in kind and amount, insisted upon for those sufficiently strong to take them. In order to maintain the discipline, those who persistently violate the regulations must be discharged.

The basis of the treatment is purely climatic, hygienic and dietetic. Doctor Osler says: "My firm conviction is that more tuberculosis patients are injured than helped by drugs," not that the drugs do harm in themselves, but during the attempt to check the cough and the fever by their use the more essential treatment is neglected.

The food must be nourishing and easily digestible. Doctor Samuel Griffitts, then Professor of Materia Medica at the University of Pennsylvania, writing in 1795, said: "Milk alone is of more value in this disease than the whole materia medica." The dietary at the Rutland sanatorium for September 24, 1904, was as follows:

Breakfast.—Wheat flakes with milk, steak, potatoes, wheat muffins, bread and butter, cereal coffee, milk *ad libitum.*

Dinner.—Soup, roast lamb, potatoes and one other vegetable, celery, bread and butter, tapioca cream.

Supper.—Cracked wheat with milk, oyster stew, crackers, bread and butter, fruit sauce, milk *ad libitum*.

In addition to the regular meals lunches of raw eggs and milk are served at 10:30 A. M., 3:00 and 8:30 P. M. By special order of the physician extra chops, steak or eggs are served at the regular meals. At least two quarts of milk and three eggs should be taken daily. At Phipps Institute, Philadelphia, three quarts of milk, six eggs, and one meal of solid food are prescribed. The food taken consists fundamentally of breadstuffs and milk, meat, and eggs. Doctor Woodhead, of Cambridge, England, states that food is necessary:

First, to aid the tissues to withstand the attacks of the tubercle bacillus.

Second, to kill it.

Third, to render assistance to the body in the removal of the germ and the degenerated tissue.

Care of the soil is quite as important as care of the seed.

Rest, both physical and mental, so long as the temperature remains elevated is imperative. Rest is taken in the recumbent or reclining position; the bed or chair should be wheeled to the veranda and the surroundings must be of the most cheerful nature.

Exercise, limited to suit the strength of the patient, is practiced from the beginning of the treatment, If the patient is in an advanced stage of the disease and is unable to leave his bed, he is taught breathing exercises. Various movements and breathing exercises are practiced by all, but the exercise par excellence is that which demands the out-of-door presence of the patient. On the grounds at Liberty and many other sanatoria are measured paths of known incline where the patient is first permitted to exercise, his amount of exercise being limited by prescription. As he grows stronger various diversions are offered him in the form of walking, fishing, shooting, driving, croquet, and even a moderate amount of golfing is allowed. In the winter sleighing, skating, coasting, tobogganning and snow shoeing are indulged in under careful supervision. Others do light gardening, and still others assist with the work of the household or farm.

The regulations require that the patient retire at 9:00 o'clock and sleep with windows open if the bed is not in a lean-to or tent—if in the latter, three sides are open the year around. He arises at 6 to 6:30 A. M. and dresses in a dressing room which has been warmed to a comfortable temperature.

Patients taking the open air treatment usually have no difficulty in sleeping soundly and hypnotics are usually not required. Cold sponging, wet packs or massage are inductive of sleep in those who do suffer from insomnia, and are tried before hypnotic drugs are resorted to.

Systematic bathing forms an important part of the treatment—sponging the body with cold water and rubbing briskly with a rough towel until the reaction takes place is one of the most efficient and easily performed modes of bathing. If the patient is not strong enough to stand the cold sponging well, sponging with warmer water and rubbing with the towel is beneficial or even the rub alone. Shower and needle baths are beneficial, and other forms of therapeutic bathing are also employed.

The medicinal treatment is purely symptomatic. There is as yet no specific treatment for tuberculosis, although much work is being carried out in various parts of the world along this line. The only specific treatment employed at the Saranac Sanatorium has been the Koch tuberculin treatment. The use of tuberculin for therapeutic purposes has been confined almost entirely to incipient cases. At that sanatorium of the incipient cases which received no tuberculin six per cent were alive in 1904, while of the incipient cases which received tuberculin 76.7 per cent were alive,—showing a result favorable to the cases treated by tuberculin. Very little medicine is used—cough medicines are not prescribed. No drugs are prescribed for the night sweats, these nearly always cease after the patient has been at rest for a time and are almost unknown among those who are taking the fresh air cure. Constipation must be guarded against and persistent diarrhea checked. The various complications must be individually treated as they arise.

The care of the sputum is an all-important factor in the hygiene of the sanatorium. The patient must be taught not only how to improve his own condition but also how not to render himself a source of infection for others. Each patient must carry a cup for the reception of sputum. These are of metal and have a lining of heavy paper. The cups are frequently collected, the lining with the contained sputum removed and burned and the cups boiled. Thus the danger of infection is reduced to a minimum. Doctor Trudeau reports that the dust taken from all of the buildings at Saranac, except in a single instance, failed to infect guinea-pigs, and that since the opening of the Sanatorium in 1884 no employe or servant has been known to develop tuberculosis.

The length of stay at the sanatorium, of course, varies. At the Adirondack Cottage Sanatorium six months is the maximum term except for unusual reason. At the Rutland Sanatorium five and one-half months was the average term. Many are able to leave sooner and, having received their education, carry on their treatment at home and become missionaries for the antituberculosis cause in their community.

The fact that many advanced cases have been taken into the sanatoria during recent years has somewhat lowered the percentage of recoveries. At Rutland, Massachusetts, the results were as follows:

Of incipient cases 75.8 per cent were apparently cured or had the disease arrested.

The number gaining in weight was 544.

Average gain in weight 13½ pounds.

Number losing in weight 30.

Average loss in weight 4⅝ pounds.

At Liberty the percentage of cases cured or in which the disease was apparently arrested reached eighty-seven per cent. This in a different class of cases, however. At Saranac seventy-five per cent were apparently cured, while fifteen per cent had their disease arrested and ten per cent were improved.

Relapses must be guarded against and after leaving the sanatorium the patient should regulate his life in a manner consistent with continued health. Systematic exercise must be taken and an abundant supply of fresh air and plenty of nourishing food secured. By disseminating the knowledge which he has acquired at the sanatorium, the patient becomes one of the most valuable workers against the disease which is said to daily claim more than four hundred victims within the boundaries of the United States.

* * *

HOME TREATMENT (NON-MEDICINAL) OF TUBERCULOSIS.

By HUBBARD NORTH BRADLEY, A. B.

A LARGE proportion of the medical profession in the United States are agreed that the sanatorium is the best place to treat tuberculous patients, but so long as the conditions are what they are, the problem of treatment at home must be studied.

Doctor Papillon, in considering conditions in France, calls attention to three objections to the sanatorium treatment, and these objections apply largely to our own country as well. First, the facilities are wholly inadequate to treat all tuberculous patients. Even in Germany, where the sanatorium treatment is most perfectly organized, only about seventeen thousand patients were treated during 1902–3, while one hundred thousand died from this disease alone during the same time. Secondly, the patient must be returned to unimproved surroundings after his course of treatment. Thirdly, the greatest objection of all is the difficulty in getting a patient to leave home before he is incapacitated. These objections have led many men to a careful study of the successful home treatment.

The general features of the treatment are familiar to all, namely: fresh air, nourishing food, rest and exercise systematically regulated.

If there is sufficient yard room and circumstances permit, the best plan is to build a tent or shack containing about one thousand cubic feet of air space. The floor should be raised for the sake of dryness, and the windows should open out from the top so that all may be open even when it rains. The roof should be tight. Here the patient should spend all his time except when he is out-of-doors. Flannel night-clothes should be worn and arrangements made so that the bed coverings will not come off during sleep. A hot water bag is all the heat that is necessary. Absolute rest in bed must be secured during fever. This may sometimes last months. Patients who are in bed most of the time should change their position from time to time, and take deep inspirations to prevent hypostatic congestion. If they are afebrile or very slightly febrile, they may rise every half hour or hour and take some breathing exercises. A temperature of 100° indicates absolute rest. In the absence of fever, regular exercise should be taken—mainly walking—to be continued as long as the rectal temperature does not show more than the physiological rise. Exercise should never be carried to the point of weariness.

Doctor Knopf and Doctor McLaughlin, of New York, call attention, in the *New York Medical Journal,* to a number of ways of carrying out the details of home treatment. If the conditions are not ideal enough to have a shack with southern exposure, a flat roof or even a fire-escape may be utilized, though the latter is not to be advised for obvious reasons A half-tent, on the roof or in the yard, with the patient in a reclining chair beneath it exposed to the sun with the exception of his face is a favorite method with these men. When all these methods are impracticable, an aerarium is sometimes built, which consists of a platform built outside a window, allowing one-third of the bed to be out of doors. Under still other conditions when the publicity of the preceding method is undesirable or when the number of rooms in a house is very limited a window tent has been built entirely within the room. This tent covers the head of the bed and communicates with the outside air through the open lower sash. When the upper portion of the patient is within this tent and the flaps tightly drawn down and tucked under the mattress, the patient may breath fresh air from without while the balance of the room is kept in a fair degree of warmth. Tightly woven blankets should be used if possible. Layers of newspapers between the blankets are excellent for keeping out the cold. Patients sometimes complain that the light awakens them too early in the morning. In this case some dark material may be placed over the eyes. In cold weather a woolen helmet is a good thing. In starting open-air-treatment the patient should be gradually made accustomed to cold, but the very coldest weather is no contra-indication to the treatment.

Dressing and undressing should always be done in a warm room, the bath and friction rubs being taken in the same temperature, which should be about 72°. A pleasant view before the patient is a very valuable thing if it can be secured.

Diet should be the same here as in the sanatorium treatment. Many times the stomach is not disturbed and an ordinary nourishing diet is readily taken. At other times forced alimentation is necessary.

In connection with home treatment the establishment of dispensaries, especially in cities, is very advantageous. These may be centres for various activities such as instruction in hygiene. Disinfection stations for sputum cups, linen, et cetera, may be established; and diet-kitchens for the very indigent.

The general practitioner may enlarge indefinitely upon the practical suggestions referred to above, and a still more encouraging number of cures will be reported as he gets the people educated to the importance of strict adherence to the general principles of treatment laid down by him.

ORIGINAL ABSTRACTS.

MEDICINE.

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FINSEN'S ILLNESS.

Floystrub and Scheel give an interesting account (Fortschritte der Med., Number XXII, 1905, from *Therapie der Gengenwart,* July 1905) of the fatal illness of Niels R. Finsen, noteworthy not only on account of the heroic bravery of the illustrious patient, but also on account of the variety of the disease, and the observations made in this case.

The chief symptom was ascites which was long recognized as being no ordinary dropsy, but the result of a peritonitis, for examinations demonstrated an exudate. Friction was audible in the pleural and liver regions and also felt by Finsen, so that thickening and adhesions of the peritoneum and pleura were evident. Finsen early thought of echinococcus, but this idea became abandoned as the disease advanced. The liver and spleen were enlarged in the beginning, but the liver especially contracted more and more. So a cardiac lesion was suspected, but as there were no evidences of valvular disease, the serous membranes seemed more likely to be the seat. Death occurred September 24, 1904. Autopsy showed the case to be one of those rare ones originally spoken of as "icing liver," but more accurately termed by Pick "pericarditic pseudocirrhoris of the liver," though even this is not so accurate as "chronic serous peritonitis" or "peritonitis hyperplastica exudativa," since the pericarditis is not always present or primary. In Finsen's case, as in some others, there was a genuine cirrhosis of the liver. This must be of importance in the production of the ascites, though the thickened peritoneum so uniformly present suggests a stasis, such as may occur in heart disease. In fact, there was in Finsen's case an adhesive pericarditis. The disease lasted more than ten years, during which time, as everyone knows, Finsen devoted himself to the most extensive scientific investigations and the most generous philanthropy, but at the same time he carried out the observation and treatment of his own case in the most thorough manner. By dietetic treatment he was able to accomplish, a large amount of work, instead of devoting himself to repetitions of abdominal puncture, the fate of most patients with similar diseases. Periodic dry diet, dechlorization, and a careful regulation of quantity and quality of food, based upon regular weighing of food and body, were the chief features of the treatment. Very striking was an increase (instead of a decrease) of the diuresis, along with a great subjective improvement, within three or four days of the institution of the dry diet. Later, Finsen was led to think that the decrease of chlorides in the urine, in cases of anasarca and dropsy, was confused in most writings on the subject, and that the development of edema depended upon the osmotic pressure in the body. He concluded that an excess of sodium chloride in the tissues and tissue juices attracts water from the blood, and he applied the idea to the treatment of his own case, and continued the observations up to two days of his death. As regards the excretion of sodium chloride, it appears that the greatest excretion occurred in the "salt-poorest" period of diet, and that later, with moderate limitation of salt, the excretion was still greater than the ingestion. Pleural fluid obtained after a dechlorization period contained only 0.07 per cent of sodium chloride, whereas the ascitic fluid before the period contained 0.72 to 0.82 per cent. The observations also show that even when sodium chloride is limited as much as possible, the body still receives as much of that salt as it requires. The nature of the disease in Finsen's case made recovery impossible, but the observations indicate the great symptomatic value of dechlorization in certain cases, and suggest a greater value when the anatomic changes are not so far advanced.

SURGERY.

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CYSTS OF THE THYROID GLAND.

Joseph C. Bloodgood, M. D., of Baltimore (*Surgery, Gynaecology and Obstetrics,* August, 1905), has taken for his study all the cases of lesions of the thyroid gland which have entered John Hopkins Hospital from 1889 to the present time—a total of one hundred and twenty-two cases. The paper deals with the clinical and pathological study of thyroid cysts. By way of introduction, a short summary of pathological changes in the thyroid gland and their clinical features is presented, in order that the reader may better understand the cystic conditions. The thyroid is described as a ductless gland composed of acini lined by a characteristic type of epithelial cells, containing later in embryonic life colloid material. This distends the acinus and it is soon lined with epithelial cells. The stroma is quite vascular and the vessels have thin walls.

In exophthalmic goitre there is distinct hypertrophy of the gland. These typhoid lesions are divided into hypertrophies, tumors and inflammations. Hypertrophies are represented by simple exophthalmic goitre, tumors by carcinoma, sarcoma, cysts, et cetera, while acute or chronic inflammations are rather unusual lesions. In simple goitre the gland is symmetrically enlarged, though one lobe may be larger than the other. The gland enlarges gradually and is found more frequently in the female than in the male; in the female it is usually associated with pregnancy. It usually does not present any important symptoms until greatly enlarged. The clinical features are so distinct that they are not likely to be misunderstood. Exophthalmic goitre may present more complex symptoms, yet they are not difficult to recognize. Hypertrophy usually becomes more pronounced as the disease advances; sometimes when the clinical symptoms are not definite, the pathology of the gland may be positive. These two conditions represent the symmetrical enlargement of the gland. Inflammations may cause symmetrical enlargement but there are usually symptoms present indicating the character of the lesion.

The asymmetrical enlargements are cysts, adenomata, or carcinomata. Malignant tumors are doubtful, and when occurring in individuals over thirty years of age, should be removed. Thyroid cysts may occur from ten to sixty-five years of age. Those in old people of short duration suggest the possibility of malignant tumor. The duration of the tumor varies from two weeks to fifty-three years; all but six of the cases reported, have existed more than one year and six months. The size of the cyst bears no relation to its duration. Cysts that have existed for a long time may gradually become smaller. It is important to note whether the appearance of the tumor was associated with puberty, pregnancy, the menopause or traumatism. Also whether it began in a normal thyroid. In only one of our cases presented, was a cyst formed at puberty and one was first observed at pregnancy. Another case of great enlargement was coincident with the menopause. The condition of the gland may be made out by palpation before or during operation; usually it is not enlarged. The experience of this surgical clinic shows that cysts arise from comparatively normal glands, that when symptoms of exophthalmic goitre have been present with the cysts, the symptoms have disappeared when the cyst has been removed.

Three cysts were located in the median line, eleven in the right lobe and six on the left side—none were outside of the gland. A large number of cases are reported giving their pathological peculiarities. A study of these cases does not bring the writer to positive conclusions concerning the etiology of the thyroid gland.

That they are all of hemorrhagic orogin is not certain; cyst formation may be found without hemorrhage and hemorrhage may take place without cyst formation. Vascularity is greatly increased in Graves' disease, yet hemorrhage is uncommon. The treatment of cysts is removal. In many cases this is easily accomplished. As evidence of the safety of the operative procedures he states that in the series of cases there has been no mortality or serious postoperative complications or recurrent cyst in the remaining thyroid tissue. C. G. D.

GYNECOLOGY.

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CLIMACTERIC HEMORRHAGE DUE TO SCLEROSIS OF THE UTERINE VESSELS.

Barbour (*Journal of Obstetrics and Gynecology of the British Empire*, June, 1905) calls attention to what has hitherto been a rather obscure cause of uterine hemorrhage, particularly at the menopause. He reports a case occurring in his practice and a number of others from the literature.

The author's case was a woman aged forty-six, XI-para. She had always been quite well until four and a half months before admission to the hospital, when she had a prolonged menstrual period with excessive flow. Examination showed the uterus forward, enlarged, and freely movable and with no sign of malignant disease. The operation consisted of a total removal of the uterus, including the cervix. The pathological change of importance was a thickening of the vessels in the broad ligaments and in the uterine wall. Microscopically, the deep layer of mucosa showed a whorled structure, particularly marked about the blood-vessels and glands. The vessels were largely increased in number and the capillary walls consisted of thick lamellæ of fibrous tissue. The vessels of the myometrium were also thickened, but not to the same degree as those of the mucosa.

The lesion in this case and in similar ones reported in late literature seems to be an arteriosclerosis affecting only the vessels of the uterus.

The etiology is obscure. Previous inflammation may be an important factor in causation.

The diagnosis cannot be made except by the exclusion of the other causes of uterine bleeding.

Treatment consists in removal of the uterus. Curettage gives only temporary relief. C. G. P.

OBSTETRICS.

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PYELITIS IN PREGNANCY.

G. BELLINGHAM SMITH (*Journal of Obstetrics and Gynecology of the British Empire*, August, 1905) states that his belief is that this condition is not rare in pregnancy and is often overlooked.

In his first case there was pyrexia for four weeks. The urine was febrile in character, containing albumen and pus. There was no tumor in loin or iliac fossa, but pressure over the region of the right kidney caused pain. There were no symptoms of cystitis. Symptoms cleared up shortly after premature confinement. The second case gave a history of severe pain in the region of the right kidney and increased frequency of micturition. There was no symptom of cystitis. Urine similar to first case. Condition cleared up before labor. The third case was sent in as a possible ectopic gestation, having pain in the right iliac region and severe pain in the right lumbar region. The urine is similar to other cases. No cystitis. Patient left before confinement, so this record is incomplete. All three cases showed bacillus coli communis. Pyrexia present in all but the second.

He reviews the previous literature on the subject, and then discusses the condition more generally. The onset of the condition is sudden and may come at any time from the fourth to the ninth month, more often from the fifth to the eighth. Almost all cases involve the right kidney. The infection apparently takes place through the blood, and the organism found in twelve out of thirteen cases examined bacteriologically was the colon bacillus, the other being streptococcus. In many cases the attack was preceded by diarrhea. There may be rigor with the onset. The temperature may rise to 103 or 104 degrees, but is usually irregular. There may be pain in the right loin, extending to the right iliac region and thigh. The urine is febrile, uniformly acid, containing pus and albumin. Pressure over the right kidney causes marked pain. There may be a secondary cystitis. Duration from two to six weeks. Course variable whether judged by temperature or urine.

As to the effects of the condition on the course of the pregnancy. Out of the fifteen cases recorded, there were four in which premature labor occurred. Three of these seemed to be directly due to the severity of the attack, two at the eighth month and one at the seventh. In eleven cases there seemed to be no effect on the course of gestation. In all but three of the cases going to full term, the symptoms cleared up before confinement. In the cases of premature delivery, the pyelitis cleared up shortly after delivery, on average within two weeks. In one of the cases going to full term, the pyuria persisted for three weeks after the delivery, and in two cases the condition went on to pyonephrosis.

As to treatment. There is a tendency to recovery. Treatment demands quiet, warmth, milk diet, attention to bowels, and in drugs urotropin, benzoic acid and salicylates. In the majority of cases there is no indication for the induction of labor. In the extremely severe cases a premature delivery may occur without being induced.

W. M. S.

PEDIATRICS.

By ARTHUR DAVID HOLMES, M. D., C. M., Detroit, Michigan.

ABUSE OF MILK IN INFANTILE THERAPY.

Guinon (*Rev. Mens. Des. Mal. de l'enf,* March, 1904) is strongly opposed to the time-honored dictum that milk is the ideal food for infants and young children in any and every case, and says: "It applies not only to cow's milk, but sometimes to human milk as well." He reports numerous cases of children, who not only do not thrive on milk, but are attacked by serious gastrointestinal troubles from its use, and divides these cases into classes.

(1) The child may do well on breast or sterilized milk to the end of the first year. The digestion, however, has never been perfect, intestinal disinfection being ncessary from time to time. When the child has reached a light mixed diet, indigestion appears and the physician puts the child back on exclusive milk with an aggravation of the condition in almost every case.

(2) A child who is raised on the breast may be habitually constipated, with poor appetite and digestion. Instead of varying his diet, exclusive milk is continued, with the result that gastroenteritis often develops.

(3) During the second year a child is eating eggs, soup, and so forth, which he digests well. Unfortunately, however, his sole drink is milk. This is given whenever he is thirsty. The milk does not quench his thirst, but he drinks it in increasing quantities. Finally the stools become fetid and sometimes he vomits, takes a distaste for milk and refuses it. In the latter case the indigestion disappears; but if he continue it, the indigestion grows worse.

(4) For some reason the child has a more or less acute intestinal

infection. He grows better under treatment, but the milk has been resumed and the child continues to have abnormal stools either with constipation or diarrhea. In nearly all the author's cases the milk was carefully sterilized or boiled, and in case of the breast-fed the milk appeared to be of good quality. Notwithstanding this, the children were pale, listless and illy nourished, though many were fat. Vomiting with fetid breath were symptoms in many and undigested stools in all, anemia being always present.

The author's treatment was to withhold milk altogether for a time, or decrease the quantity and give it with some farinaceous food. Soups were given in most cases, and sometimes raw beef or mutton, yolk of egg, or buttermilk. The intestine was disinfected with castor oil or calomel and the anemia treated with iron. Guinon considers that the chemistry of the digestion of dyspeptic children is still so obscure that we cannot give a rational reason for their poor digestion of milk.

OTOLOGY.

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SYMPTOMATOLOGY, DIAGNOSIS, AND TREATMENT OF SIGMOID SINUS THROMBOSIS.

James F. McKernan, M. D. (*The Laryngoscope*, Volume XV, Number VII), discusses the symptomatology of this disease under three heads: (1) In typical cases; (2) In atypical cases; (3) In cases where the bulb and sinus are primarily involved without macroscopic disease of the mastoid process.

In the first class the important symptoms are: (1) Temperature which depends upon the amount of septic material entering the general circulation, which if it be large is at once succeeded by a rise to 104° or 105°, or even higher, and quickly followed by a remission to normal or below. There may be one rise during twenty-four hours, or several depending upon the rapidity of absorption. (2) Chills are present in only a certain proportion of cases. They generally precede the rise in temperature, and are followed by profuse sweating. In many cases there are no definite chills, only slight chilly sensations. Particularly is this true in postoperative mastoid cases. (3) The pulse in cases of thrombosis increases in rate with the rise in temperature. In those cases complicated by a collection of pus in the brain it is much slower. (4) The respiration early is little affected, becoming slightly increased as the temperature rises. (5) The pain is greater than in ordinary mastoid disease, usually being referred to the side of the head and the occipital region. (6) Nausea and vomiting are frequently present during some stages of the disease. (7) Intraocular symptoms are present in about twenty-three of the cases. Puffiness of the eyelid is sometimes caused by extension of the clot to the cavernous sinus, or by interference with the return of ophthalmic circulation. (8) Vertigo is observed only when the meninges are involved. (9) Cerebration is not usually disturbed until late in the disease. (10) The local symptoms are edema over the mastoid and around the exit of the emissary and occipital veins. There is often marked stiffness of the muscles of the neck on the affected side. (11) Constipation is a marked symptom in the early stages often followed by diarrhea. (12) Among the general symptoms are: Malaise, loss of appetite, a dry furred tongue, and a foul breath.

In the second class are those cases following a mastoid operation which usually do well for a few days. Then the patient becomes irritable, restless, and declines food. The tongue becomes dry, the pulse increases, and the temperature gradually rises to 104° or 105°. Following this there are marked remissions or these may be slight. The patient complains of headache and sometimes nausea and sleeps but little. There is no chill, cerebration is clear, and the only evidence of mental disturbance is an occasional irritability of temper.

In the third class are those cases where an acute purulent otitis media, with its usual symptoms is followed by an unusually rapid rise in temperature from 99° to 105° or 106°, and quite as suddenly it falls to normal or below and this is repeated at varying intervals. No chill precedes the rise in temperature and during its height the pulse is rapid. They are fretful and irritable, and later become drowsy. During the interval when the temperature is down they feel remarkably well.

Diagnosis.—The first class of cases is easily recognized from the symptoms already given, which may be present in the individual case, also, the blood count generally shows a high per cent of polynuclear leucocytes.

In the second class, after eliminating all other diseases the diagnosis is made from the continuous high temperature and the unfavorable condition of the patient. On inspecting the mastoid wound it is found to be doing well except at one point, that being the bone covering the sigmoid groove. There the bone is darker and there are no granulations. The blood count is the same as in the first class.

The diagnosis in the third class is made almost entirely upon the temperature range, following as it does, so soon after an acute purulent otitis.

Treatment.—In the first and second classes, when the diagnosis has been made, it is wiser, when the patient's condition will admit it, to primarily expose, ligate, and resect the internal jugular vein from a point below at the clavicle to its exit from the skull. Should any of its tributaries be found involved they should also be ligated and resected well beyond the point of macroscopic involvement. All diseased glands along the neck should be removed by incision. Having done this the sinus should be exposed from above the bend to the region of the bulb, the dura freely opened and the contents of the sinus evacuated, going backwards towards the torcular until a free return flow is obtained. Occasionally the inferior petrosal sinus is thrombosed. When this condition is found, if the patient's condition wlll allow it, it is best to expose the sinus and remove the obstruction, thus removing the infective material and giving the patient the best chance of recovery. The neck wound should be irrigated with warm saline solution, a large cigarette drain inserted throughout its entire length, the soft parts closed by continuous suture nearly to the upper end and a moist dressing applied.

In the third class the ideal treatment would be the same, but the patients are nearly all young children and prolonged operations are to be avoided if possible. Also these cases are caused by primary infection of the blood current and the percentage of recoveries is in favor of removing the clot without ligating the vein. If ligation is necessary it is best done at a subsequent operation unless the patient's general condition is very good. R. B. C.

LARYNGOLOGY.

By WILLIS SIDNEY ANDERSON, M.D., Detroit, Michigan.
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TREATMENT OF NASAL OBSTRUCTIONS DUE TO DEVIATIONS OF THE SEPTUM.

The importance of nasal obstructions has been recognized for many years. Of all causes of obstruction none is more important than the deflections of the septum. There are differences of opinion as to etiology and treatment. Killian believes most of them are due to traumatisms, but most observers agree that developmental defects play a more important part. Swain, in a recent article entitled, "Facial Asymmetry as a Possible Cause of Deformity of the Nasal Septum" (*The Laryngoscope,* July, 1905), agrees with Welcker that asymmetrical development of the entire bony nasal cavity, together with the hard palate, is the cause of septal deviations. Swain also adds that the causes of asymmetrical development are more often inherited or congenital than acquired. Roe in discussing Swain's paper speaks of the evolutionary changes that take place in the mixture of the races, and quotes the statement of Poutiquent "that a man has only exceptionally the septum which belongs to him."

For the past few years the submucous resection of the septum has found favor with a number of operators. The names of many workers are associated with this operation. It has been a gradual development, and to no one operator is all the credit due. The principle of the operation is the separation of the mucous membrane from both sides of the septum, the removal of the deflected portion and the replacement of the mucous membrane flaps. When properly done healing takes place promptly and a permanently straight septum results.

Otto T. Freer has recently written an exhaustive article entitled "Deflections of the Nasal Septum; A Critical Review of the Methods of their Correction by the Window Resection, with a Report of One Hundred Sixteen Operations" (*Annals of Otology, Rhinology and Laryngology,* June, 1905). In this article the author reviews the different methods in vogue. He does not agree with Killian as to the importance of traumatisms in the production of deflections, especially if they involve the bony skeleton. Freer describes with great care the details of his operation and formulates his views in the following:

(1) The appearance of deflections does not divide them naturally into two great groups with distinct aspect, one obviously traumatic and the other due to faulty growth, as is taught by Killian. To consider etiology in this way in the description of deflections is merely confusing and it is better, as heretofore, to group them according to their shape.

(2) The window resection is adapted to children, but the chance of a possible recurrence from the effects of growth demands a very complete removal of the vestiges of the deflection.

(3) The firmness, and, therefore, probably the cartilage and bone of the septum, is completely or nearly completely reproduced in the window after the resection.

(4) Cases seen two and one-half years after the operation show permanency of the result.

(5) Though the author has never seen a case of sinking in of the nasal bridge after the window resection, Mueller's and Menzel's warning should be heeded to retain a strip of the cartilage of the septum under the lateral cartilages of the external nose.

(6) The lower portion of the quadrangular cartilage, as high as the level of the alæ nasi, may be resected without fear, from its anterior free border horizontally back to the bone.

(7) The recumbent position of the patient is the best for the operation, except in operating along the nasal floor.

(8) The Kirstein light is the most suitable one.

(9) The use of powdered cocain, applied with a swab, gives a perfect and safe local anesthesia and the submucous injection of cocain is needless, except at the very front of the septum.

(10) The best access to a deflection for its resection is obtained by mucous membrane incisions along its vertical and horizontal crests, and not by means of a button-hole cut in front of it, such as is made by Killian and others.

(11) The separators used for the elevation of the mucosa should be thin, curved, and either dulled or knife-edged for dissection.

(12) The presence of a nasal angle in an instrument complicates its movements, and makes it necessary to hold it with a stiff wrist and fingers, thus sacrificing the lightness and accuracy of motion of straight instruments.

(13) It is better to make the first cut through the cartilage with a keen, thin, round-bladed knife than with a thicker sharp-edge that scratches through.

(14) Even if strictly subperichondrial, the elevation of the mucosa is apt to encounter adherent places that need separation by keen dissection.

(15) The cutting out of the denuded cartilage in one piece is the easiest part of my operation.

(16) With the exception of fragments, cut with the chisel from the crista incisiva or anterior and of the vomer, neither cartilage nor bone should ever be broken, twisted or torn from its attachment, but should always be clearly cut away.

(17) The author's modification of Gruenwald's punch forceps has proved the best instrument he has used for resecting the bone, as it is slender and long, and yet easily cuts through the thickest bone encountered.

(18) There is a tendency to hasty and incomplete removal of the bony part of the deflection.

(19) Sewing is needless.

(20) Strips of lint, impregnated with subnitrate of bismuth, make the best tampon. The author introduces the strips in layers, as described, so that the flaps are perfectly held in place.

(21) Considering the many difficult bony resections met with, the author does not think that the operation can be well done in the average time of twenty minutes, the estimated time of Killian.

In the same number of the *Annals,* Professor Gustau Killian has an article on his resection operation. He says that "Most of the deformities of the nasal septum have their origin from an injury." As stated above this view is not shared by the majority of observers. The essential feature of Killian's operation is the use of his long-bladed speculum that enables him to hold apart the mucous membrane on each side which gives ample space to work.

William L Ballenger, in the same number of the *Annals,* bids for popularity on the strength of his swivel knife, which enables him to reduce the time of the operation. According to this author the operation is a simple and quick one, necessitating but few instruments. He describes five special instruments, namely, one swivel knife, two elevators (Hajek's), one gouge and one bone-cutting forceps. The swivel is for the removal of the cartilage. In another article in the June number of *The Laryngoscope* he gives the advantages of his knife, as follows:

(1) Extreme simplicity in construction and use.

(2) Its cutting edge is universal. It will cut a circular or any

other shaped piece of cartilage from the septum without introducing it more than once between the elevated mucoperichondriums.

(3) The cutting can be done in a few seconds.

(4) Its use is devoid of traumatism and shock.

(5) Healing takes place in a shorter time than by other methods attended by traumatism.

(6) Its use will not result in laceration or perforation of the mucoperichondrium.

Francis W Alter, in an article entitled "The Submucous Resection of Deflected Nasal Septi" (*Journal of the American Medical Association*, July 1, 1905), follows the Killian method. He believes the Killian long-bladed nasal speculum essential for the proper performance of the operation. In one case Alter left small islands of cartilage attached to the mucous membrane to serve as foci for future proliferation.

Sidney Yankauer, who contributes an article on "Submucous Resection of the Deviated Septum" (*American Journal of Surgery*, June, 1905), reports no perforations in twenty-eight cases. The method described does not differ essentially from those of others.

These and other articles recently published show the interest that is taken in the resection operation. While there are many differences of opinion as to details most observers who have made the subject a study agree that it offers the best means of correcting these deformities of the septum so far advanced.

DERMATOLOGY.

By WILLIAM FLEMING BREAKEY, M. D., ANN ARBOR, MICHIGAN.

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RESULTS FROM TREATMENT OF TINEA TONSURANS WITH *X*-RAYS.

SABOURAND (*Annals de Dermatologie et Syphilologie*, 1904, page 80) publishes a series of reports on the treatment of ring-worm by *x*-rays, which forms a most mighty argument in favor of the use of this method.

Complete epilation was produced over the desired area by the administration at one sitting of *x*-rays equivalent to four or five Holzknecht units. Both healthy and diseased hairs are shed about fifteen days after the exposure, and when the diseased hairs have all fallen out, within twenty-five days of the treatment, the infectiousness of the disease is lost. New and healthy hair covers the area again within ten weeks.

The third report covers the whole of the year 1904. Sabourand, Pignot, and Noiré give the number of cures for the year as 374, as contrasted with 164 the previous year under old methods, not including 212 out-patients cured.

Sabourand urges the advantages of x-ray treatment, emphasizing the maximum time of treatment of three months as contrasted with the two years previously necessary, and the ease of application, as good results having been obtained with out-patients as with those in the hospital. In fact, he believes ring-worm in all its forms is now, thanks to x-rays, entirely under control in Paris, and expresses his belief that within five or six years it will have disappeared from the city.

NEUROLOGY.

By DAVID INGLIS, M. D., Detroit, Michigan.
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A DEFINITION OF DELUSION.

Robert H. Chase has an article in the *Journal of Nervous and Mental Diseases* for July, 1905, on "Delusions of the Insane." Chase defines to his satisfaction the difference between a delusion and a false idea. His explanation is as follows: According to his theory that "an insane delusion takes its rise in disturbances of the vital feelings," we can at once comprehend from a review of his article that a delusion always begins in a vague way, out of the sense of adequacy or inadequacy, or from a morbid feeling of personal identity. The subsequent definite expression of the delusion in the form of a false idea is simply to be ascribed to an attempt at explanation on the part of the patient. The article is accompanied by an explanatory table of delusions, and the following conclusions are summarized:

(1) That a delusion takes its origin primarily in a perversion of the vital feelings rather than in a derangement of the intellectual activities of the mind.

(2) That delusions may be divided chiefly into those based on the sense of adequacy and the sense of inadequacy, with a limited number due to the morbid change of the ego. That delusions of inadequacy largely preponderate.

(3) That delusions begin in a vague way out of a disturbance in the vital feelings, and that the definite form of the false idea which afterwards appears is the attempt at explanation by the patient to reconcile himself to himself.

(4) That the genuine delusions of the insane are very limited in number, but that the false ideas growing out of them are very numerous.

(5) That contrary to the text-books, delusions as a rule are not transient and changeable. I. H. N.

EDITORIAL COMMENT.

MEDIEVAL METHODS IN THE HYGIENIC TREATMENT OF SMALLPOX.

We have looked upon the *Monthly Bulletin of the Indiana State Board of Health* as a model. Its utterances are almost always clear, practical and based upon the best knowledge of the subject treated. It must, if read as it deserves, educate health officers and others. It has been remarkably free from the hysterical alarm about some diseases, and the hypocritical and unscientific assertions of improvement in the status of others, that characterize so many of its contemporaries.

It is with the greatest regret that we read an article in a recent number entitled "A Model Smallpox Precaution," because the method described seems more like the echo of some medieval report in the treatment of a case of black death than of a matter in the age of bacteriology. To quote verbatim:

"From some unknown cause, a case of smallpox appeared among the colored employes at the Culver Military Academy, situated on the banks of Lake Maxinkuckee, at which, besides the one infected person, were about twenty exposures, all colored people living in four small houses, nearly adjacent to each other. Before the health officer arrived the strictest quarantine had been establishd and a guard of four persons were on constant watch. A large cloth tent was immediately improvised in the woods, four miles away, along a lake, and one mile from any human habitation, to receive the exposed persons, and a small tent a hundred yards from this, to accommodate the infected person. To this locality the whole party was removed in the night after 1 o'clock, and the houses, with all their effects, from which they were removed, except the clothing they wore away, burned in one conflagration. The buggy that carried the smallpox patient away, together with the harness, were also burned. A well was driven on the grounds, a cooking stove set up, abundant provisions provided, attendants procured, and a guard established night and day. When these parties were released from quarantine and their persons disinfected, they were supplied with entire new suits of clothes, their other losses duplicated, and their wages in the meantime were given them without interruption. All their clothing worn when under quarantine will be burned. All this was done under the suggestion and at the expense of Harry Culver, with the authority and approval of the County Health Officer, Dr. J. S. Martin."

The new clothes and the wages are the only redeeming features in this recital, but they appear only as a slight return for the unnecessary interference practiced upon the unfortunate people. Surely the man who suggested such a method should not be expected to do less, but it would be unfortunate in other cases if health officers followed the "model method" and taxpayers were mulcted for such folly. It is more than possible that the "houses" were of the kind so often thought good enough for negro help, and that the effects and clothing were of little value. If so, let us hope the houses will be replaced by better ones, so that their occupants may take some pride in keeping them clean, and so less likely than before to harbor not only smallpox, but other and commoner diseases.

But how about the application of the "model" to a model house, say Mr. Culver's residence, in case he or a member of his household got smallpox? Must it be burned down? Under the circumstances, the tent was a good thing for the patient, and the larger one for the suspects. Were the tents burned? If not, why not? From the text, one may conclude the hour chosen for removal was part of the plan, perhaps chosen with reference to the well-known fear of dark, more marked in negroes than in Caucasians; but just why it is necessary to state the hour is as hard to understand as many other parts of the account. Take the burning of the buggy and harness; perhaps these were as decrepit as the houses and as worthless as the clothes. But can such a model be followed everywhere? Would the editor of the *Bulletin* recommend the cremation of an ambulance or hack? Then, too, the horse that wore the harness! Was it not just as much infected? If he was disinfected, with formalin or carbolic acid, sublimate or bread crumbs, surely the rest of the health officers should partake of the knowledge!

Since the method detailed smacks so much of antiquity, we are not surprised to see no mention of vaccination in the account, but surely an editorial comment might have been made. Was the patient vaccinated? Were the other employes ever vaccinated? Surely one might expect every employee of a military academy to be vaccinated and also every student, so that the danger of smallpox would be reduced to the minimum. Colonel Culver ought to know that great warriors have looked after this important matter for three-quarters of a century. With this, a suitable building to care for the sick, a "Mammy" or an "Uncle" to nurse the patient, a little soap, water, and antiseptic; a little gumption on the part of the commander, and a little discipline in the employees and students, and no houses or buggy need be burned, no guard established night and day, no temporary insanity be displayed, but a model set up that would be really useful for others.

A SALMAGUNDI ON THE SOLUTION OF LIFE.

CONSIDERABLE speculation is rife concerning the tenability of Burke's claim to the creation, or partial creation, of artificial life by the action of radium bromid on sterile beef bouillon. This investigator, by sprinkling a few grains of the metal on the surface of beef gelatin and subjecting the material to sterilization, produced small, rounded bodies which he named radiobes—radium life. When the creations were provided with fresh gelatin they were observed to increase in size, and to bifurcate, some presenting many branches. The fact that the radiobes appeared to possess the property of growth led Burke to unhesitatingly define them as living bodies, which opinion he afterward modified. The bodies are not in the least related to the bacterial cell, since they readily dissolve in warm water, and by reason of this fact Burke classified them as a new variety of life—the original life from which were evoluted the present higher forms.

* * *

Prior to Burke's experiments Dubois conducted similar investigations, the results of which were identical, but was more conservative in drawing conclusions than was his English confrere. The Frenchman classed the growths as mere granulations which retain their form for an indefinite period and then slowly undergo crystallization, and concluded that since they do not possess the faculty of procreation, they are not true organisms. Radium, Professor Dubois contends, is not a life producer, but is decidedly the reverse—a formidable life destroyer. By even remote proximity the tissues are disorganized and the cells and organs rendered incapable of performing their normal functions.

* * *

Ramsey, an authority on the action of radium, ventures an explanation as to the alleged growth of the radiobes, declaring that the radium bromid employed in the experiments of Burke and Dubois sinks to the bottom of the boullion and gives rise to certain gases. The emanations from the radium coagulate the albumen in the beef culture, and a delicate capsule is formed around the gas bubble, which now attaches to the radiobe, and in the eyes of the investigator true life and true growth are apparent. The supposed organism will increase in size so long as the radium continues to evolve the radiations, which, of course, would be for many centuries.

* * *

Before Burke startled the world with his revelations, Littlefield prepared a solution of six ounces of distilled water and two ounces of sodium chloride, to which were added six ounces of a 90-per-cent solution of alcohol. To a portion of this mixture the doctor added two ounces of standard aqua ammonia, carefully stirring the mixture with a clean glass rod. Placing a bell jar over the solution, a chemical action was observed, with a consequent evolution of hydrogen, the bubbles possessing violent motility. After the reaction had subsided some of the material was examined microscopically, and Littlefield beheld cube-shaped crystals, which were in all probability mere granules of sodium chlorid. Within a short time these crystals assumed hexagonal form, and the investigator contends that from these granulations was developed the elementary organism. The point was soon reached, where, according to the observer, the inanimate forms were imbued with true life. By a process of metamorphosis the creation was changed into a smooth disk, closely resembling a red blood cell, and possessing ameboid movement, throwing out temporary extensions, as do the protozoa in their search for food. Littlefield evidenced marked enthusiasm regarding his creations, and even ventured the assertion that he had produced a microscopic insect resembling an elongated house fly, possessed of six attenuated legs, and transparent wings bearing a coat of light-colored hair. Beyond doubt a wild imagination suggested these astounding statements, for other investigators have since worked out Littlefield's experiments, without obtaining results beyond the mere crystallization of the chlorids.

* * *

In this connection it may be interesting to chronicle the observations of Loeb, which, although slightly different in nature, have the same end in view. With certain chemical mixtures he endeavored to fertilize the ovum of the sea urchin, star fish, and many other of the lower forms of life. In some of the species the investigator carried the process to an alluring stage, but owing to the fact that he had no means of supplying nutriment to the supposed growing organism, his work thus far has not materialized, and it is doubtful if, with the male element lacking, his idea of life will be realized.

* * *

It is strikingly apparent that the mystery of life has not been solved by the work of the foregoing investigators. The difficult problem has received attention from many scientists, but all efforts at artificial generation of life have thus far baffled the most ingenious devices. Spencer, Darwin, Huxley, and others believed at one time or another that the artificial production of life was within grasp, but ultimately the claim of each was abandoned. About thirty-five years ago Bastian, a firm believer in the theory of spontaneous generation of life, conducted a long series of experiments bearing on the artificial production of living matter, which, says the doctor, "is constantly being formed *de novo*, and in accordance with the same laws and tendencies which determine all the more simple chemical combinations." In order, if possible, to verify the truth of this declaration, Tyndall inaugurated a series of experiments along the line of Bastian's findings, and after many tests reached the conclusion, which is just as apropos now as when formulated, that "no shred of trustworthy evidence exists to prove that life in our day has ever appeared independent of antecedent life."

ANNOTATIONS.

THE LULL OF THE LINOTYPE.

THERE is an epidemic of "strike" abroad in the land. The printers have been seized with the idea that the employers should give nine hours' pay for eight hours' work, and in some quarters there seems to be a difference of opinion between the two forces. In the meantime many printing establishments are being operated by few artisans, and pending settlement of differences various medical journals throughout the country are tardy in appearing, this publication being among the number. The forbearance of our readers is asked until the matter can be amicably adjusted.

NEW VARIETIES OF ORGANISMS FOUND IN VARIOLA PUS.

Marbury, who has been conducting microscopic observations on smallpox pustules, recently contributed the result of his findings to German medical literature. This investigator discovered in variola pus certain varieties of organisms, the spirochæte and vibrio types predominating. He expresses the opinion that the spirochæte is the product of the segmentary unification of the vibrios. Triangular forms presenting long, delicate, wavy threads at two of the angles were also observed, and the author suggests that this form may be the fundamental type of smallpox organism, the variety bearing possible relation to the trypanosomes.

THE SPIROCHÆTE PALLIDA AS A FACTOR IN SYPHILIS.

Anent the many investigations which have been undertaken for the purpose of discovering the organism of syphilis, Neoggerath and Stahelin announce that conjointly conducted experiments prove almost conclusively that the spirochæte pallida is the causative factor in the disease. These workers claim to have discovered the organism in circulating blood taken from the lobule of the ear. To one cubic centimeter of the infected blood was added ten times as much of a one-third per cent solution of acetic acid, and after centrifugation the sediment was examined microscopically. The typical spirochæte was observed in three patients exhibiting undoubted secondary syphilis, while in healthy persons and in patients suffering from other diseases this particular organism could not be isolated.

THE RÔLE OF THE PNEUMOCOCCUS IN PNEUMONIA.

The Medical Commission of the New York Health Department has recently completed a year's study of the pneumococcus. The investigations were conducted with the idea of ascertaining the rôle of this organism in the causation of pneumonia. The line pursued demonstrated that the pneumococcus is quite frequently found in healthy individuals, and careful experiment revealed that the virulence of the organism is practically the same in healthy persons as in those afflicted with the disease. Sunlight has a marked attenuating effect upon the organism, the life of which is about two weeks' duration, and the period of its greatest prevalence dating from November to April. The committee concluded that pneumonia is a contagious disease, and that the dissemination of the pneumococcus is facilitated by sweeping, dusting, et cetera. Obviously, plenty of sunlight and absence of dust are potent factors in checking the spread of the disease. Statistics in the State of New York disclose a striking yearly increase in the number of deaths from pneumonia, and it was this rendering, to a great extent, which influenced the Health Department to elect the research.

CONTEMPORARY.

THE HISTORY OF MEDICINE.

PART SECOND.—Continued from Page 428.

THE ALEXANDRIAN ERA.

[DOCTOR JOSEPH P. WIDNEY IN SOUTHERN CALIFORNIA PRACTITIONER.]

PASS over the long years of two centuries. Two centuries in which the subtle Greek mind, which in the fourth and fifth centuries before Christ had made Athens the intellectual head of the ancient world, wasted itself in idle disputation, and lost itself in skepticism; two centuries in which the Greek arms after rolling back the tide of Asiatic invasion from its shores, in turn became invader, and the Macedonian Phalanx, with locked shields and bristling spears, pierced the heart of the Persian empire. Alexander, after the battle of Issus, and the long siege of Tyre, turning to the conquest of Egypt, founded upon the shore of the Mediterranean, at the mouth of the west branch of the Nile, the city in which the second great step was made in the advancement of the science of medicine. Alexandria became not only the center of wealth and of trade of the ancient world for the three centuries preceding the birth of Christ, but also the center of its intellectual life. It was still the after-flowering of the same fruitful Greek mind which had made, in the centuries before, of Athens an art gallery and a school of philosophers. The best blood of Greece, its talent, its genius, its energy, had followed the tide of Macedonian conquest, and had finally setttled here under the shadow of the pyramids to again stamp its mark indelibly upon the history of the ages. Here was founded the great Alexandrian "Museum," which, under the wise care of the Ptolemies, became a vast university, with a library of 700,000 volumes, and its four colleges of Literature, Astronomy, Mathematics and Medicine. Here, by the wisdom of the government, ample arrangements were made for dissection, and the study of anatomy was so diligently prosecuted that many of the terms which we now use in our text-books were there first given to the various organs of the body. This, the Alexandrian era in the history of medicine, might be appropriately termed the anatomical era, as it was especially marked by advancement in the department of anatomy. Lectures upon medicine and surgery were delivered daily to crowds of students, and the studies carried on clinically in connection with hospitals. Many of the most important operations of surgery were performed.

It was enough for a physician to say that he had studied at Alexandria to give him standing and influence anywhere in the then known world—and all this, strange as it may seem, is not a record of today, nor of our own land; it was twenty centuries ago; under the Orient sun, on the banks of the ancient Nile. Strange mutations of time! The blue waters of the eastern sea still wash the shores of the land of the Ptolemies, and the palms wave by the banks of the great river, while the ships still come and go in the port of Alexandria; but the library which grew up under the enlightened care of those old kings, seven centuries later, fed the fires of conquerors too ignorant even to suspect the priceless value of what they destroyed. The great "Museum," with its colleges, ceased to be; and now, after two thousand years, in all that land can scarcely be found a school of the lowest class. And to our shame, be it said, less wise than those old kings, the place of whose burial, even, the world has forgotten for twenty centuries, today, in many of the states of our own land, restrictions are placed by law upon the practical study of anatomy, such that the dissection of a human body is almost a crime.

It seems the working of some immutable law of nature that in the intellectual world, even as in the vegetable, the season of flowering and fruitage is ever followed by the sere and yellow leaf, the torpor, the decay. Beyond the mountain crest begins again the descent. Nature at the summit of her great peaks has few tablelands. No sooner does a race reach its maturity, its manhood, than, as in the individual, comes old age; and as though the earth, too, were exhausted, and must rest, the new life, the new civilization, spring up not on the seat of the old, but away beyond, in the new lands. And so the human race moves ever on, and on, leaving only ruins, and death, and old graves behind.

The Alexandrian era was drawing to a close. All the while that Herophilus searched curiously into the anatomy of the human body, and students followed the daily rounds of the professors in the clinical lectures through the hospitals; while Eratosthenes was measuring the length of a degree of the great circle upon the level sands of the desert, and Timocharis determined the motions of the planet Venus; all the while that the gay citizens of Alexandria jested, and jostled and wrangled in the busy streets of that metropolis of the eastern world, away across the sea, upon the banks of the Tiber, history was again preparing to repeat herself. The old and unchanging law of the empire was again working itself out. Wealth and luxury had slowly sapped the ground-work of the civil structure in Northern Africa; and Rome, which in the third Punic war had finally crushed out, with fire and sword, her last great rival, was grasping from her seven hills at the dominion of the world.

With the waning of political power in Alexandria a blight seemed to fall upon the institutions of learning. The schools were broken up; the students scattered. In the first few centuries after Christ the degeneration was rapid. The mongrel population, which had gradually been drawn together, grew daily more corrupt, more vicious. Greek and Jew, monks and infidels, priests of the gods and the profligate rabble that knew no god, all the seething, restless elements of her polyglot population fought and rioted through her streets in almost daily encounter, while the haughty Roman troop looked on in scornful indifference, uncaring so long as the populace killed each other, but raised no hand against the eagles of Rome.

In the midst of it all, is it any wonder that the schools died out; that the great libraries slowly wasted? Philosophy and culture perished in the seething mass. Learning became a thing of little worth. Creeds, and colors, and bloods, and through all fanaticism, bitter, unrelenting, hating to the death, rent the heart out of the old cultured life of the city of the Ptolemies; and the hope of the world abandoned it, and moved on; and lo! humanity had left behind it one more of its innumerable graves.

The character and tastes of the dominant race give type and color to the civilization of its age. The diversified, mutually balanced nationalities of modern times render it impossible for any one nation to so wield this preponderating influence. Eighteen centuries ago it was not so. The world was not large enough for more than one such power at a time. The subtle, ingenious Greek mind had stamped itself indelibly upon the thought of the eastern Mediterranean for the five centuries preceding Christ, and even for two or three centuries following. The Greek mind was eminently philosophical in type. The Roman, which now succeeded it, as the dominant mind of the world, was martial and judicial. Its work was different. The Greek had taught man to think, to investigate, to question. The Roman was now to teach him to obey. The one had been the poet, the artist of the world. The other was to be its lawgiver. The one left to posterity the Parthenon, the other the Pandects. But the Roman mind, strong, practical, orderly, was deficient in the finer feelings and was deficient in the taste for philosophical investigation. It founded no great schools. Under it science languished and learning wasted.

Medicine felt the universal depression. The four centuries following the decadence of the Alexandrian school were singularly barren in medical advancement. The Romans produced no great physicians; they have left no noted works. The practice and the literature were unmistakably mediocre. Roman physicians shone by the reflected light of the great men who preceded them. Indeed, much of the practice lay in the hands of slaves and freedmen. The true Roman, when he shed blood, preferred the sword to the lancet. Of the physicians living and practicing in Rome the most noted were Greek by birth and education. Among these, in the second century after Christ, was Galen, an Asiatic

Greek, who had left a name second only to that of Hippocrates in the annals of ancient medicine. His writings, which are marked by much ingenuity, have been handed down in a fair state of preservation. His theories of disease, however, although they wielded an unbounded influence in the middle ages, were not marked by the soundness of judgment displayed by his great predecessor.

[TO BE CONTINUED.]

MEDICAL NEWS.

THE MISSISSIPPI VALLEY MEETING.

About three hundred physicians attended the thirty-first annual meeting of the Mississippi Valley Medical Association recently held at Indianapolis, although the registration did not include that number. It was the third gathering of the association which that city has entertained and was pronounced a very successful affair. Mr. John W. Holtzmann, mayor, delivered an address of welcome on behalf of Indianapolis, and Doctor W. N. Wishard delivered an address of welcome on behalf of the medical profession of the city, which was responded to by Doctor H. O. Walker, of Detroit, *vice* Doctor Joseph M. Mathews, of Louisville, who was absent. The presidential address was delivered in the evening by Doctor Bransford Lewis, of Saint Louis, his subject being "Some Unrecognized Responsibilities of Press and State in Conserving Health." Doctor Arthur R. Edwards, of Chicago, followed with the address on medicine, which contemplated "Certain Phases of Uremia—Their Diagnosis and Treatment"; while Doctor W. D. Haggard, of Nashville, in the address on surgery, detailed "The Present Status of the Surgery of the Stomach." A large number of papers were announced for the meeting but many of those scheduled for the medical section were not represented by authors at the time of call. The attendance in this section was not so large as that in the surgical section, which seemed to be the chief attraction of the meeting. The social feature this year did not include the customary banquet. Instead, extensive lunches and dinners were served by individual members of the Indianapolis profession. The substitute did not seem to meet with general satisfaction, however, greater opportunity being afforded for meeting friends and acquaintances at a society banquet than is possible with the makeshift of private hospitality. Two receptions were given to the ladies, and a smoker and vaudeville was accorded the men; while for both men and women a Dutch lunch and vaudeville concluded the numbers of the entertainment committee. The next meeting will be held at Hot Springs, Arkansas. The following officers were elected for the ensuing year: President, Doctor J. Henry Carstens, of Detroit;

first vicepresident, Doctor Joseph Rilus Eastman, of Indianapolis; second vicepresident, Doctor H. H. Grant, of Louisville; secretary, Doctor Henry Enos Tuley, of Louisville (reelected); treasurer, Doctor S. C. Stanton, of Chicago (reelected).

THE PASSING OF A PHYSICIAN.

DOCTOR FRANK KING OWEN, of Ypsilanti, Michigan, died Saturday, October 14, 1905, of angina pectoris. He was born at Sweetwater, Monroe county, Tennessee, September 26, 1843, and descended from Welsh stock, which first emigrated to Northumberland, Pennsylvania, and about the beginning of the eighteenth century settled in Tennessee. His parents were James White Owen and Ann Amelia (Kirkpatrick) Owen. The mother died when the subject of this sketch was twelve years old, but the father still lives at the venerable age of eighty-three. The spacious old Owen homestead—the abode of his father and grandfather—is still a conspicuous figure in the town of Sweetwater, characterized as the habitation is by solid walls of cream-colored brick, massive outside chimneys at each gable, and a formal row of clipped cedar trees which shade the long piazza. Notwithstanding Southern residence the Owen family were ardent supporters of the Union. An uncle of deceased was major in a Tennessee regiment, and soon after attaining his eighteenth birthday, Frank enlisted in the Forty-third Missouri, to which state his father had moved from Tennessee. Although several times wounded he escaped serious immediate injury, but the remote effects of exposure, privation, and arduous service were quite apparent. At the close of the civil conflict young Owen turned his attention to the study of medicine, and after a course of reading with a local physician, entered the University of Michigan, from which institution he was graduated in 1871. Soon afterward he married Miss Georgiana Webb, daughter of a well-known physician in Eastern Michigan, and began the practice of his profession in Ypsilanti, where he performed the labor devolving upon "the good physician" to the time of his demise—thirty-five years, and there are few in that city who could not say to him "I was sick and ye visited me." A short respite from civil practice was taken during the Spanish-American war, when he served his country in the military capacity of assistant surgeon to the Thirty-first Michigan Infantry. As age crept into the sixties the anxiety incident to the life of the physician began to assert itself in short and severe attacks of pain in the cardiac region, which became more and more frequent, until finally in June, 1905, the doctor decided to elect a much-needed vacation, and in company with a most congenial friend, Reverend Father Kennedy, a two months' trip was taken through the Canadian Rockies, the Pacific Coast region, and the Southwest. He seemed much benefited for awhile after his return, but eventually the demands of practice clearly demonstrated that no permanent good had been wrought by the rest. Doctor Owen possessed a thorough knowledge of the practice of medicine, which was reinforced with an unusual geniality and hearty sympathy that inspired confidence and won him a large clientele. He was identified with county, state, and national medical organizations and enjoyed the esteem of his confreres. A widow and two sons survive him. The funeral was conducted in compliance with an oft expressed wish that he be accorded the impressive service of the Knights Templar and the rite of cremation. In "Beside the Bonnie Briar Bush" it is said of the beloved Doctor MacLure—"Surely no funeral is like unto that of a doctor for pathos."

MILITARY MEDICINE.

THE Association of Military Surgeons of the United States conducted its fourteenth annual meeting in Detroit, September 26-29. 1905. Surgeon-General Wyman, of the United States Public Health and Marine Hospital Service being absent, the chair was occupied by Lieutenant-Colonel Albert H. Briggs, of the New York National Guard. This medical body embraces the medical service of the army, the navy, the public health and marine hospital service, and the medical department of the state divisions of the national guard. Lieutenant-Colonel Julius F. Henkel, of the Michigan National Guard, was chairman of the Committee of Arrangements. A goodly number of papers were read and discussed, among them being one by Surgeon-General S. Suzuki, of the Japanase Imperial Navy, who detailed his "Experiences During the Russo-Japanese Naval War," the contribution containing ten thousand words. "The Real Triumph of Japan" was the title of a paper read by Major Louis L. Seaman, U. S. V. E. "The Prevention of Disease in the Army and the Best Method of Accomplishing that Result," was the title of the paper that received the Seaman award of five hundred dollars, the author being Major Jefferson R. Kean, of the United States Army. The Chinese Government was represented at this meeting by two physicians. The following officers were elected for the ensuing year: President, Lieutenant-Colonel A. H. Briggs, N. G. S. N. Y., of Buffalo; vicepresidents, Brigadier-General R. M. O'Reilly, Surgeon-General of the Army, of Washington, District of Columbia, Admiral M. Rixey, Surgeon-General of the Navy, of Washington, District of Columbia, and Colonel G. T. Vaughan, Assistant Surgeon-General of the Public Health and Marine Hospital Service; secretary, Major James Evelyn Pilcher, United States Army, of Carlisle, Pennsylvania (reelected); treasurer, Major Herbert A. Arnold, of Ardmore, Pennsylvania (reelected).

The next meeting will be held at Buffalo.

MINOR INTELLIGENCE.

THE chair of surgery at the University of Chicago, recently vacated by Doctor Llewellyn F. Barker, present occupant of the chair of medicine at John Hopkins, has been tendered to Doctor Werner Spalterholz, of the University of Leipzig.

DOCTOR EPHRAIM CUTTER, of New York City, has been elevated to the presidency of the American Institute of Micrology.

PROFESSOR JAKSCH, of Prague, has been elected to the chair of medicine recently made vacant by the death of Professor Nothnagel.

DOCTOR EDMUND NEUSSER, professor of medicine at Vienna University, has been raised to the ranks of the nobility by Emperor Franz-Joseph.

DOCTOR WILLIAM OSLER was recently tendered the Thomas Young Lecturship on Medicine at Saint George's Hospital, which position he accepted. Next spring he will lecture at this institution on the diagnosis of abdominal tumors.

THE International Congress of Tuberculosis which convened recently in Paris was largely attended. Physicians from thirty-three countries were registered, and the secretary reported an attendance of thirty-five hundred delegates.

THE new Alexandra Hospital, which is being erected in the English portion of Montreal, is nearing completion. The hospital is intended for cases of diphtheria, scarlet fever and measles, and will be equipped with one hundred and twelve beds.

DOCTOR JUAN GUITERAS, Professor of Pathology and Tropical Diseases at the University of Havana, has been elevated to the deanship of the institution. Doctor Guiteras recently visited New Orleans in the interest of the Cuban Superior Board of Health.

THE International Congress of Hydrology, Climatology, Geology, and Physical Therapeutics recently conducted a meeting at Venice, under the presidency of Professor A. De Giovanni of the University of Pardua. The opening session was held on October 10.

AN examination by the inspectors of the Bureau of Health has resulted in the exclusion of six hundred seventy-five children from the schools of Philadelphia. Transmissible diseases and insufficient evidence of vaccination were the causative factors in barring attendance.

THE new laboratory connected with Bellevue Hospital Medical College is nearing completion. The structure is six stories in height, and is of the same architectural design as the college building proper, which adjoins it. The laboratory is a very welcome acquisition and will greatly facilitate college work.

DOCTOR ERNEST L. SHURLY, of Detroit, was recently elected to the presidency of the American Climatological Association. The other offices will be occupied by the following: First vicepresident, Doctor A. D. Blackader, of Montreal; second vicepresident, Doctor Henry Sewall, of Denver; secretary-treasurer, Doctor Guy Hinsdale, of Hot Springs. Atlantic City was designated as the meeting place for 1906.

STATISTICS for five months show a plague mortality in India of over seven hundred fifty thousand. In one province over twenty thousand victims succumbed in a single week, and the conditions prevailing suggest the negligence of the British government in establishing sanitary precautions.

THE first American Tuberculosis Exhibition will be held in New York City during the month of November under the combined efforts of the National Association for the Study and Prevention of Tuberculosis and the Committee on the Prevention of Tuberculosis of the Charity Organization Society.

FIRE visited the University of Pennsylvania on August 14 and destroyed Medical Hall, the consequent damage being estimated at one hundred fifty thousand dollars. The destruction of the anatomical collection, which was a valuable one, is most seriously regretted, inasmuch as it cannot be duplicated.

THE City of Mexico has a new hospital, which was recently completed at a cost of over three million dollars. The institution is built on the pavilion plan, there being forty-seven pavilions in all, and is conceded to be the most magnificent in the republic. Special pavilions have been provided for mechanotherapy, electrotherapy, hydrotherapy and infectious diseases.

JACOB H. SCHIFF has offered to enrich the building fund of the Sanatorium for Hebrew Children, at Rockaway Beach, by a donation of ten thousand dollars, provided a sum of twenty-five thousand dollars be collected by April 1, 1906. If these sums are realized the promoters will be in possession of a sufficient amount to complete the proposed new wing to the institution.

DOCTOR MARY O'MALLEY has been appointed to the medical staff of the Government Hospital for the Insane, at Washington, District of Columbia. The appointment is unique, inasmuch as no woman has hitherto occupied a position in this institution.. The doctor will have charge of the female patients, and the women employees will also be subservient to her commands.

MR. W. B. SAUNDERS, head of the medical book publishing firm which bears his name, succumbed suddenly, on October 1, at Atlantic City, New Jersey. His death came as a shock to his many friends, who, although aware of his ill health, had not anticipated his early demise. The company will be continued, Mr. Saunders having provided in his will that it be incorporated under the laws of Pennsylvania.

SAINT PETERSBURG is suffering from an epidemic of diarrhea. Social conditions are held responsible for the alarming increase of the disease, thousands of laborers being unemployed and compelled to subsist upon a very unsatisfactory diet. Conditions in the bake-shops are far from ideal, the bread being of very poor quality. The consumption of decayed vegetables by the poorer classes is also a potent factor in the intestinal disorder.

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ORIGINAL ARTICLES.

MEMOIRS.

A REVIEW OF THE LIFE OF LUDWIG.*

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PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF MICHIGAN.

WE meet together at the beginning of the new school year, professor and pupil alike, as students of scientific medicine. In spite of the great advances which were made during the latter half of the last century medical science is still in its infancy.

There is scarcely a question in medicine which ought not to undergo further study, and many of the theories which we hold today will surely give place to others as new facts are discovered. It is the duty of us all, students and teachers alike, not alone to study medicine as it is known today, not alone to keep in the mental training needed to follow the rapid advance of our science, but to help this advance, each striving to add to the store of medical knowledge upon which the safety and happiness of mankind is so largely dependent.

The medical department of this University has become celebrated not merely because it has developed well-trained physicians, but above all, because of the research spirit which has pervaded it. It has been the home and birthplace of many scientific investigators. It is for us to maintain this spirit of research, to cultivate independence of thought and originality, and to strive to add to the discoveries which have made the Medical Department of the University of Michigan a leader in the medical world.

Since this is to be our earnest endeavor, we cannot do better, at the beginning of the work of a new year, than to review the life of Carl Ludwig, one who was not only one of the greatest investigators in natural science the world has seen, but who was without rival as a teacher of investigators. In writing this sketch of the life of Ludwig, I have drawn freely not only from my own recollections, but from the written tributes which have been paid to his memory by many of his old pupils, themselves now among the foremost teachers of physiology in Europe.

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*Address at the opening of the Medical Department of the University of Michigan, September 26, 1905.

Carl Friederich Ludwig was born December 29, 1816, in Witzenhausen, in the electorate of Hesse. His father, an officer in the Napoleonic wars, had been compelled by wounds to give up a military career, and being in favor with the Elector, was appointed High Treasurer. Ludwig came from a race of fighters, and a deep scar on his upper lip gave evidence of his participation in student duels. He was proud of his descent, and I recall an amusing reference which he made to the fact, that the Hessians had played a part in the early history of our land.

He was the second of six children who were carefully trained at home by a wise and affectionate mother. At the close of his school days he was sent to the University of Marburg, where his student days were stormy. Indeed he was forced to leave for a time because of "politische Umtribe" (political intrigues). He studied at Erlangen, and spent one year in the Surgical school at Bamburg, finally returning to Marburg where he took his degree in 1839. Continuing his studies, he was appointed in 1841 Prosector of Anatomy under L. Fick. In 1842 he was formally admitted to the Faculty of the University of Marburg, his thesis being "A Contribution to the Study of the Mechanism of Secretion of the Urine." In the title of the first published work we find the key to his future greatness,—the recognition of the part played by physical forces in the functional activities of the animal body.

In 1846 he was appointed ausserordentlich Professor of Comparative Anatomy at Marburg, and in 1849 Professor of Anatomy and Physiology at Zurich. It was in this year that he married Christine Endemann, who with loving care watched over him, guarding with affectionate solicitude his somewhat frail health, making possible his lifelong devotion to science. Too often the world forgets, when paying honor to a great man, the debt of gratitude which it owes to the mother and wife, who with unseen devotion have developed his character and supported his failing strength.

In 1855, Ludwig was called to Vienna, as Professor of Physiology and Zoology at the academy for army physicians—the Josephinum, and in 1865 he succeeded Weber in Leipzig, receiving the title of Professor of Physiology, and Director of the Physiological Institute, which was about to be constructed. This institute was the seat of Ludwig's labors for nearly thirty years; it saw the development of many of the greatest physiologists of our day; it was the birthplace of discoveries which have been of inestimable value to medical thought; and the institute itself has been the model for many others. The plan is a witness of

Ludwig's breadth of view; and his recognition that the problems of physiology can be solved only through a knowledge of the structure of the parts involved, and a study of both the physical and chemical changes occurring within them, and that, under ideal conditions, all these forms of work should go on side by side. The building had the form of a capital "E." The main portion was arranged and equipped for the study of physiological processes from the physical side, one wing was devoted to histological work, the other to physiological chemistry. The lecture room, closely connected with the main part of the building, occupied the space between the wings. Above the laboratories, but completely separated from them, were the dwelling rooms of the Professor and his family.

The period when Ludwig was entering upon his physiological work, was one of unrest in medical as well as political thought. Modern biological conceptions can be said to date from that time. The greatest physiologists of the day, in Germany, Alexander Humboldt, Johannes Müller, and Liebig, while recognizing that living beings are acted upon by the physical and chemical forces which govern inorganic things, considered science to be incapable of explaining the phenomena of life. They assumed the existence of some mysterious force in the bodies of animals and men, which caused life processes to take a different course from the changes occurring in inanimate objects. Only death released the atoms from this mysterious influence and permitted them to react as they did outside of living organisms.

Johannes Müller[1] wrote: "The harmony which of necessity unites the organs to form a unit, could not exist without the influence of a force acting and penetrating throughout the organism and independent of any special part. That creative force exists before the members, and maintains the harmony of the whole; it manifests itself within each animal, following rigorous laws dependent on its nature."

This vitalistic doctrine was combatted and for a time at least overthrown through the scientific work of four pupils of Johannes Müller—Helmholtz, du Bois-Reymond, Ludwig and Brücke.

Tigerstedt[2] quotes Ludwig as having said, "We," that is Helmholtz, du Bois-Reymond, Brücke and himself, "pictured to ourselves that it would be relatively easy to place the whole of physiology on a purely physico-chemical basis and give it the position of physics, but the business was more difficult than we had thought."

Helmholtz, recognizing the limitations set by existing chemical and physical knowledge, devoted himself only to those branches of the science which seemed capable of an exact chemical and physical explanation; du Bois-Reymond contented himself with the study of the narrow field of the electrical phenomena of living organisms, and did more than anyone else to show that physiological problems are capable of being handled with the same precision as purely physical processes;

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[1] *Handbuch der Physiologie des Menschen*, Volume I, 1844, page 21:

[2] *Karl Ludwig, Denkrede von Robert Tigerstedt, Sonder-Abdruck aus den Biographischen Blattern*, Band I, Heft 3, E. Hoffman & Company, Berlin.

Ludwig with characteristic fearlessness and enthusiasm attacked problem after problem, striving to find how many of the subtle problems of life were susceptible of a mechanical explanation.

In 1858, the second and last edition of Ludwig's "Lehrbuch der Physiologie des Menschen" appeared. It is dedicated to his friends, E. Brücke, in Vienna, E. du Bois-Reymond, in Berlin, H. Helmholtz, in Bonn. The point of view taken by the writer is diametrically opposed to that of his predecessors, as he himself states in the introduction—

"The problem of scientific physiology is to determine the functions of the animal body and deduce them as a necessity from its elementary conditions."

"Whenever the body of an animal is subdivided to its ultimate parts, one always finally arrives at a limited number of chemical atoms, and upon phenomena which are explainable on the assumption of a light ether and electricity. One draws the conclusion in harmony with this observation, that all forms of activity emanating from the animal body must be a result of the simple attractions and repulsions, which would be observed on the coming together of those elementary objects. This conclusion would be unassailable, if it were possible to show with mathematical accuracy, that these elementary conditions were so arranged in the animal body with respect to direction, time and quantity, that all the phenomena of living and dead organisms must necessarily flow from their interaction."

"This conception, as is well known, is not the traditional; it is the one among the newer which, as especially opposed to the vitalistic, has been named the physical. The view, aside from all details, finds its justification in the irrefutable demand of logic, that a cause shall underlie every result, and further in the soundest rule of every experimental science that one draws upon only absolutely necessary grounds of explanation."

"It contests therefore the justification for setting up new grounds of explanation as long as the insufficiency of simpler ones has not been proved."

Du Bois-Reymond towards the end of the year 1848 said: "The belief in a vital force, like the other dogmas, depends less on scientific conviction, than the need of a soul to certain organizations; that is why this belief, like that of the dogmas, cannot be rooted out." And Mosso wrote ten years ago "After a short truce during which vitalism appeared to be abandoned, we see it born again under another form. Literature and art bear witness to the reaction which produces itself, and on all sides, one detects the breath of mysticism which invades the mind. The school of the nêo-vitalists has already conquered the pulpits, and many fear that it will stifle the spirit of true science, as it has done in the Catholic Universities."

Tigerstedt wrote the same year: "In the latest physiology one can notice a tendency to find in the simplest life processes, for example, gas exchange by respiration, lymph formation, secretion, et cetera, some-

Mosso: Charles Ludwig, Paris, 1895, page 7.

thing more than chemico-physical processes, and to attribute them to the vital activity of the cell. This new vitalistic view differs from the old. It does not assume the presence of a peculiar mystic force, and does not break away from the fundamental fact that the law of the conservation of energy applies no less to living than to dead matter. To say that this or that process rests on cell activity, is to say that our present knowledge of chemistry and physics does not suffice to explain, and the true explanation must wait better knowledge of the forces at work within the cell." It seems to me that vital activity thus interpreted means simply something we do not yet understand.

The medical student of today reads with a smile of superiority of the old doctrine of the "vital spirits" accepted for so many centuries by the most noted physicians. The theory that the air taken into the lungs goes to the heart and there mingling with the blood is transformed by the heart into a subtle essence, the vital spirits, which pass by the arteries to the furthermost parts of the body revivifying and strengthening them. He forgets that oxygen was not discovered by Mayo until 1674, and that until its discovery the true function of the life-giving air could not be known. Just as in old days the doctrine of the vital spirits ruled because of the lack of knowledge of the chemistry of the air, so in later days the doctrine of the existence of a mysterious vital force has held sway and even now finds expression largely because of our lack of knowledge of physical and chemical processes, and the part which they play in the functional activities of the cell.

Physiology is in its infancy. Rational physiology had its birth in the early part of the last century. It is wonderful how much knowledge has been gained in the short space of sixty years of the complex physical and chemical processes which are the basis of life. All this has come through the modern methods of research inaugurated by Ludwig and a few other remarkable men, his contemporaries. Ludwig himself was deeply impressed with what had been accomplished, and the wide field of knowledge which had been opened up to man. I remember that he said the last time that I saw him: "What a pity that one must die just as it begins to be so interesting." Such words from the man who more than any other can be said to have laid the foundations of modern physiology and through this of rational medicine, were not so much a recognition of what had been accomplished, and an expression of thankfulness that he had been allowed to take part in the work, as a prophesy for the future.

As von Frey says, "It was not an accident that caused Ludwig to begin his scientific career in the anatomical preparation room. The structure of an organism always had a scientific and artistic interest for him.. He delighted in a fine histological preparation or dissection, the pleasure which it gave him being doubly enhanced by the conviction, that rightly interpreted it must prove a key to the physical processes which were the basis of the functional activities of the organ. Many of the investigations which he conducted were as largely anatomical as physiological. Just as his contemporary, Wagner, when writing an opera, found it necessary to surround himself with an artistic setting as far as possible reproducing the conditions of the time of which he desired to treat, so Ludwig felt the need of the most complete picture of the structure of the organ whose functions were the subject of his investigation. His anatomical plates were made with the utmost care and often with the help of the best artist he could procure.

There are many examples of researches in which he combined anatomical with physiological investigations. His research on the structure and change of form of the beating heart; his studies of the course of the lymphatics in various organs and the cause of the secretion and flow of the lymph; his attempts to bring the structure and course of the blood-vessels in different organs, into relation with their functional activity. A whole series of monographs were published under his direction on the circulation in various organs; in the eye, the ear-drum, the liver, the lymph glands, the corpora cavernosa, intestines, muscle, ear-labyrinth, larynx, and skin.

The various methods of injection of blood-vessels were well developed in his laboratory. Especially worthy of mention is the "Natural" injection of lymph spaces, by means of which Ludwig studied the lymphatics of the pleura, the central tendon of the diaphragm, the retina, and the liver.

Among the pupils of Ludwig who became celebrated as anatomists may be mentioned Schwalbe, Froriep, Flechsig, Kowalewsky, Braune, Krause, and two in this country, Minot of Harvard, and a graduate of Michigan, of whom we are proud, Mall of Johns Hopkins.

When one recalls that Physiology holds the same place for the physician that anatomy holds for the surgeon, that the training which enables one to investigate a life process must be the same, whether the function be normal or be warped by some pathological influence, it is not a matter of surprise that many of Ludwig's pupils became celebrated as physicians. Not a few of them became professors of clinical medicine; Lepine, Strumpell, Lesser, Tillmans, Horsley, Lauder-Brunton, von Basch, and I know not how many more.

In spite of his great interest in anatomy, Ludwig was above all a physiologist and the sight of the intimate structure of an organ instantly raised the questions: What does it do? How does it act? The conditions which determine the circulation of the blood always aroused his keenest interest, and it was because of his desire to grasp their significance that he was led to what has proved the most fruitful of his discoveries, the graphic method of recording physiological movements. The need of such a method can be best understood if I read a brief extract from Harvey's book on the circulation.

"When I first gave my mind to vivisections, as a means of discovering the motions and uses of the heart, and sought to discover these from actual inspection, and not from the writings of others, I found the task so truly arduous, so full of difficulties, that I was almost tempted to think with Fracastorius, that the motion of the heart was only to be comprehended by God. For I could neither rightly perceive at first when the systole and when the diastole took place, nor when and where dilatation and contraction occurred, by reason of the rapidity of the motion, which in many animals is accomplished in the twinkling of the eye, coming and going like a flash of lightning; so that the systole presented itself to me now from this point, now from that; the diastole the same; and then everything was reversed, the motions occurring, as it seemed, variously and confusedly together. My mind was therefore greatly unsettled, nor did I know what I should myself conclude, nor what believe from others."

It was such difficulties as these that Ludwig encountered, when he attempted to determine with greater precision than Harvey had done the relation of the movements of the heart and chest to the fluctuations of pressure of the blood in the veins and arteries.

In 1846, Ludwig, while still at Marburg, studied the relation which exists between the movements of respiration and the pressure of the blood. He connected a U-shaped manometer tube partly filled with mercury, with an artery, but the movements of the column of mercury were so rapid and complex, that the eye failed to retain them. It was then that he conceived the idea of placing on the mercury a float carrying a style tipped with a writing point, and of letting this record the movements of the mercury, and consequently of the blood column, on a moving surface. The movement of the paper on which the tracing was written was effected by means of a clockwork. The respiratory movements were recorded on the same paper at the same time with the oscillations of the arterial pressure. Thus the records of these two processes were written simultaneously, and could be readily compared.

Mosso,[1] the celebrated Italian physiologist, and one of Ludwig's favorite pupils, has in his possession the original of the tracing which was published in Müller's Archiv. There is inscribed upon it the date, Dec. 12, 1846, and notes concerning the experiment. It was the first time that the heart and respiration had spoken in their own language, and Ludwig in presenting it to Mosso wrote on the back, "I give to my friend Mosso for his collection, this first stammering of the heart and of the chest."

Thus was developed the Kymographion, the wave writer, an automatically recording apparatus which has not only proved an indispensable aid in the exact study of every form of physiological movement, but finds innumerable applications in physical and technical laboratories.

Ludwig's work on the relative pressures of the blood in the arteries and veins, and on the effect of respiration on the arterial and venous circulation, was followed by a research with Hoffa, in 1849, on the structure and changes in form of the beating heart, a research which served to explain the true significance of the apex beat. All of these studies on the mechanics of the circulation, naturally led Ludwig to a consideration of the means by which it is regulated, and so to a study of the nerves which act on the structures of the circulatory system.

The Weber brothers had discovered the effect of the vagus nerve to inhibit the heart, Henle the muscles in the walls of the blood-vessels, and Claude Bernard the existence of nerves which cause the constriction of certain blood-vessels. It was left for Ludwig and Thiery to point out, 1863, the importance of these nerves in maintaining the tonus of the blood-vessels, and consequently the blood pressure. Cutting the spinal cord was found to cause a fall, and exciting it a rise of blood pressure without any change in the rate of the heart. They saw the vessels of the abdomen contract, and thought that the nerves ran in the splanchnic, a fact which Ludwig and Cyon proved in 1866. Moreover, during these latter experiments, a nerve was found which ran from the heart to the medulla, the depressor nerve, which acts reflexly from the heart to dilate the blood-vessels, and which protects the heart from too great arterial blood pressure. Later, Ludwig and his pupils established more definitely the seat of the vasomotor centers, and showed that the veins as well as the arteries of the portal system are under the control of nerves. Mall, who worked with Ludwig in 1885, established this last fact.

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[1] Mosso: Charles Ludwig, Paris, 1895, page 18.

Schmiedeberg, under Ludwig's guidance, 1866, discovered the accelerator nerve of the heart of the frog and the dog, and in 1883, Wooldridge found centrifugal fibers to the heart of the dog which altered the blood pressure without changing the rate of the heart beat. Bowditch, the best known of the American physiologists, Luciana, and Stienon, studied the effects of electrical excitation on the heart muscle, and ascertained a number of facts of theoretical importance to heart and muscle physiology.

Ludwig's cleverness in inventing the instruments required for his investigations is to be seen in the "Stromuhr," by the use of which he was able to succeed where others had failed, and to measure the rate of the flow of the blood stream. By means of this he estimated the rate of the output of the blood from the heart under varying conditions, and the quantitative relation of the gases to the blood.

There is another entirely different but very important line of work, which was conducted by Ludwig and his pupils,—the physiology of secretion. It will be remembered that his first published research had to do with the mechanical conditions which determine the secretion of the urine. He was but twenty-five when he gave out the theory which became so famous,—that the urine is filtered through the walls of the glomerulus, and is concentrated and modified by the absorption of water and some of the salts by osmosis. This purely physical theory was vigorously opposed by Heidenhain and other defenders of the Bowman-Wittish theory, that the cells of the kidneys play an active part in secretion. Ludwig's view found support in the researches of many of his pupils. In these investigations the arterial and venous pressures, were compared with the pressure under which the urine collects, and the relative constitution of the blood and urine under varying conditions were studied. The question after sixty years, during which it has been investigated by many able men, is still an open one. Only a short time ago Doctor Cushny, whose loss to the University we all so deeply regret, undertook a research upon this subject, and wrote a paper in which he supported Ludwig's theory. There is still much to be learned concerning the structure of the kidney, as the clever research upon which Doctor Huber has been engaged during the past year has shown, and much to be learned concerning osmosis and allied processes, before we shall be able to solve the problem which Ludwig opened up so ably at his début on the physiological stage.

The investigations of Ludwig on the secretion of the saliva, first reported in 1851 and continued under various phases with the aid of his pupils during many years, began a new era in our knowledge of the secretion process. His experiments showed that the secretion of the saliva is not dependent on the blood pressure, that the gland cells respond like muscle cells to special nerves, and undergo chemical change when they become active, becoming hotter and giving off materials other than those brought by the blood. Ludwig strove to explain the secretion process along the lines of diffusion and osmosis—the laws of which he had studied with Cloetta in 1856 in special researches, in which, by the way, he had arrived at results, the exactness of which have been lately recognized by Ostwald. There followed in his laboratory many investigations on the formation of the urine, saliva, lymph, and the absorption of substances from the stomach and intestine.

A remarkable observation was made in the study of the absorption of the digestion products of proteid, namely, that albumoses if introduced directly into the blood act as poisons and deprive the blood of its power to coagulate. This observation in which Schmidt-Mülheim took part in 1880, gave a new impulse to researches on the coagulation, and on the formed elements of the blood. Among these must be recalled the investigations of Wooldridge, one of the most able of the Englishmen who studied with Ludwig.

Equally important were Ludwig's investigations on the interchange of gases in the lungs and tissues, the chemistry of the respiration process. The invention of the blood-gas-pump by Ludwig and Setschenow in 1859, a new application of the Torricelli vacuum, opened the way for innumerable researches. The original mercury pump has given way to many improved forms, by means of which the gas tension in the blood, serum, plasma, and lymph have been studied under a great variety of conditions.

Another extensive field of work was opened up by Ludwig and Scelkow, in 1860, when they found that it was possible to separate organs from the general circulation, and to study their metabolism, while keeping them alive by artificially circulating defibrinated blood through them. By this means it became possible to study the respiratory changes in individual organs, the effect of special substances on the vessels of the kidneys, the effect of activity and of drugs on the metabolism of the heart and of the skeletal muscles, the conditions exciting peristalsis in the intestines, et cetera. This method has been employed with success in the physiological laboratory, here, during the past year, by one of our students, C. J. Wiggers, to determine the effect of adrenalin on the blood-vessels of the brain, and the results point directly to the existence of vasomotor nerves for the blood-vessels of the brain, the presence of which many competent observers have denied.

From the time that Ludwig and Alexander Schmidt (1867) found that easily oxidizable substances pass from the tissues into the blood, under Ludwig's inspiration many such intermediate products were discovered in the chemical side of the laboratory, and their distribution through the body followed. Especially the structure of albuminous bodies was made the subject of investigation under Drechsel.

Ludwig was always deeply interested in reflex processes and many experiments were carried on in his laboratory on the spread of reflex excitations through the cord, the summation process, the course of the conducting fibers inside the cord, and the effect of local excitations and poisons.

I am conscious of the incompleteness of this account of the remarkable series of investigations carried on in Ludwig's laboratory. They involved the anatomy and physiology of all the principal organs and tissues of the body, and to properly record them one would have to write the history of physiology from 1842 to 1895.

One cannot but admire the sagacity with which Ludwig discovered new fields for investigation, where his predecessors had passed without thought of the hidden treasure; the art with which he stated the problem; the directness of his attack; the ingenuity of the experimental methods which he devised; and the faith and tenacity of purpose which enabled him to patiently force his way through apparently insurmountable obstacles, until nature, tired of resisting, revealed her secret. Ludwig once said to me, when, discouraged by the experimental difficulties I was encountering, I was ready to abandon the method by which I had been attacking the problem he had set me, "Never give in to Nature. If you do, she will take advantage of you the next time."

He was the greatest teacher of physiology the world has ever seen. Not only did he know how to direct his pupils into fruitful fields, to inspire them with enthusiasm for the work, to aid them with helpful suggestions, but when they faltered he was always ready to personally aid in the work, even in the drudgery. Above all he taught his students independence. I remember offering to help him to tie a ligature in a difficult place. He gave one of those merry, kindly smiles which endeared him to all who worked with him and said, "No, you must not help me, for if you do, you will want me to come and help you, the next time you have a knot to tie."

With untiring patience he would teach the beginner the handling of apparatus and the simplest operations and methods, guiding his every step, until the day came when the pupil should show that he could walk alone. From that moment, with rare tact he gradually withdrew from the research, allowing the man to develop self-reliance and capacity for independent work. He never lost interest in the research, however, but followed it in all its details, although appearing not to do so, and was always ready to discuss the most complicated problem in all its intricacies.

As one travelled through Europe and visited the various physiological laboratories, he rarely found more than one or two men engaged in research work. Ludwig's laboratory was the great exception; it was always full, as many as ten or twelve earnest workers from many distant lands studying under his direction.

It was remarkable how many different forms of research he could supervise at the same time and keep them all clearly in mind. When I was working with him, there were, Wooldridge, who was studying the effect of electrical stimulation of the heart of the dog; Stolnikoff, the rate of the flow of the blood; Tigerstedt, the latent period of muscle; von Frey and Grubel, the gaseous exchange in isolated organs; myself, the method of spread of reflex processes in the spinal cord; and a number of others, besides those working under Gaule on histological subjects and under Drechsel on the problems of physiological chemistry.

More than two hundred and fifty men from a dozen different countries came to study under this great master. One reason for this, was, the fact that Ludwig never made use of his students for his own immediate glory. He was absolutely unselfish. Year after year, researches which he had not only inspired, but in many cases had for the most part personally conducted, were published under the names of his students. This came to be well known; and when the English awarded to him the highest prize which they could give to a foreign scientist, it was given not alone for the work which had appeared under his name, but for superb work which he had accomplished with the aid of his pupils and in connection with which his name had failed to appear. My own case must have found its counterpart in that of many others. I entered his laboratory knowing physiology, only as most students, who have learned it only from the lecture room. He assigned my problem, started me upon the method which at the outset seemed the most promising, followed each advance which was made, with the keenest interest, often helping me in the experiments themselves, and when at the end of a year and a half of constant work I had brought my results together and written the first draft of my paper in English, he put it into German, practically rewriting it. . I shall never forget my feeling of embarrassment, as I said to him that I felt that I had no right to let that paper appear in my name, for I had only been his hands; it was really his work, not mine. "It is all right," he said, "it has been your work." Then he added, "but if you never do anything else, it will be thought that you did not do this." Ludwig was absolutely unselfish. He loved his science and rejoiced in the scientific achievements of his students. He freely gave to every earnest worker from the vast store of his physiological knowledge, and his experience in experimental methods. He became at once the friend of each of his pupils, making him feel that he had a personal interest in him and in his work. This feeling spread throughout the laboratory, where good-fellowship reigned, each man becoming interested not only in his own problem, but glad to lend a helping hand to every other, rejoicing when a research was successful and sorry when the problem baffled. I can recall Ludwig's enthusiastic, joyous shout,-as he called all who could leave their work to come and witness some physiological process revealing itself in its true light for the first time, or some unusually suggestive histological or anatomical preparation. Hearty congratulations followed, all rejoicing in the new discovery. And then came one of those delightful talks, leading us forward to the borderland of science, and giving us glimpses into that fascinating, mysterious land—the unknown.

With the love which our master inspired, there developed in the laboratory an esprit de corps, so that to have worked in Ludwig's laboratory was a password, that gave entrance to the laboratory and to the friendship of every other who had worked there. Ludwig's truthfulness, honesty and loyalty became the unconscious watchwords of his disciples. In those days as now, I fear, there was a despicable class of men who sought preferment by the quick publication of the facts which had been discovered by others. The "anything to win" kind. I recall the days when the word was passed through the laboratory that a certain distinguished visitor of that type had arrived. All work instantly ceased, apparatus suddenly got out of order, interesting tracings disappeared as if by magic. There was nothing doing. I recall other, happy days, when an old pupil came back to see the master, and was brought by him to see our work and how proudly we described the methods which we had developed and the results which we had achieved.

Ludwig was not merely a learned anatomist and physiologist. He possessed a remarkable fund of information on the greatest variety of subjects, and whether he spoke of music, art, the social, industrial, and political conditions of other lands, of science or philosophy, his point of view was always original and suggestive. He had a keen sense of humor, and in the midst of a conversation of grave interest, he would introduce an amusing story which would illustrate the point under consideration without breaking the thread of the thought. An admirable story-teller, he rarely told a story for the story's sake; gifted beyond most men as a speaker, he was a good listener; in short, he had the power possessed by so few, of leading a conversation so as to bring out the best from others. He wrote a charming letter, and found the time to answer his old pupils when, working under unsympathetic conditions, they turned to him for advice and new inspiration.

I hold in my hand a photograph which I value greatly, and which bears a characteristic inscription: "Could I but spring and swim like the third in our league, I would soon quack a 'Good morning' to you and your dear wife in New York. Oh they were good days. Your former teacher."

They were good days.

Ludwig died in his 79th year, in Leipzig, April 27, 1895.

I learned in a letter from his wife that he lay sick for seven weeks, but that his mind was always clear; even a few days before his death, his thoughts were busy with a memoir which he wished to write on his late friend Helmholtz. On the last evening of his life he spoke with his family concerning many things which interested him, then saying that he felt tired, fell asleep. His heart had ceased to do its work.

Ludwig closed his Gedachtnissrede for Ernst Heinrich Weber, with the following words: "Now that he has departed from us, he has left us a rich heritage, but inestimable good has sunk into the grave with him. The one on whom his soulful eyes rested, who listened to the flow of his thoughtful words, who felt the pressure of his hand, will always long for him. Yet not only the friend, each one who in life and in science came in contact with his power, will mourn the death of a man, in whom were mingled in complete harmony a spirit as clear as his and a nature of such richness."

A REPORT OF CASES OF HEART DISEASE.*

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WE hear a great deal of uncertain talk concerning heart troubles. I have been anxious to learn what effect, if any, high altitude has upon heart lesions, and for this reason have kept notes of one hundred and twenty-eight cases which presented symptoms of either functional or organic disease of this organ.

Of these one hundred and twenty-eight cases, forty-three are dead. Two died suddenly without medical attention. One of these was a plethoric man of thirty-five years, who was supposed to have asthma, but autopsy showed a fatty, dilated heart. The other was a man of forty-six years, who died suddenly from rupture of an aortic aneurysm. In this case there was great cardiac hypertrophy, especially of the left side.

Forty of the cases showed only functional trouble, while eighty-eight gave symptoms of change in structure. Of the cases showing only functional symptoms, two are dead. One of these was a man of fifty years, whose pulse-rate for a number of years had been forty-eight to fifty. He died of subacute meningitis, so the bradycardia may have been due to a central lesion. Autopsy showed no gross changes in the heart. The other fatal case, among those showing only functional heart trouble, was in a woman of seventy-three years, whose pulse-rate averaged one hundred and twenty during the last year of her life, and at times was very irregular. She had no fever, but was dyspeptic, and finally died of exhaustion. There was no autopsy in this case.

Of the eighty-eight cases showing organic disease, forty-one are dead. Eighteen of these (nearly one-half of the fatal cases) presented evidence of dilated heart, either by physical signs before death or at autopsy. Four of them died apparently of dilated heart uncomplicated by other disease, their ages being fifty, fifty-five, sixty-five and sixty-six years. In two of these four cases the dilatation followed great physical exertion; in one the progress was rapid and death sudden; in the other progress was slow following the strain which started the trouble.

*Read before the COLORADO STATE MEDICAL SOCIETY.

Of the other fatal cases, six were associated with rheumatism. It is interesting to note the ages of these cases—nine, nine, ten, fourteen, twenty, and seventy years, and then observe the ages of nine fatal cases which were associated with arteriosclerosis—forty-eight, fifty, sixty, sixty-three, seventy-one, seventy-two, seventy-two, seventy-three, and seventy-seven years, all at rather advanced age. There were five fatal cases wherein the heart lesion complicated pulmonary tuberculosis, with ages ranging from thirty-five to fifty years. Two cases, having chronic heart disease, died of pneumonia, ages fifty and sixty years. Among the other diseases associated with the heart lesions were nephritis, ages twenty-seven and fifty years; asthma, age fifty; goitre, age fifty; Addison's disease, age thirty-five; typhoid fever, age fourteen; cirrhosis of liver, ages thirty-seven and forty-eight; carcinoma, age sixty-four; bronchitis, age sixty-three; fatty degeneration of liver, kidneys and heart, age sixty; and the three previously mentioned as associated with meningitis, plethora and aneurysm.

It is worthy of note that of the forty cases, showing only functional trouble, but two have died. The symptoms in these forty cases included tachycardia, bradycardia, palpitation and irregularity, and the heart symptoms complicated such conditions as chorea, jaundice, pelvic lesions, vertigo, indigestion, neurasthenia, pulmonary tuberculosis, syncope, influenza, excessive use of tobacco, rheumatism, croup, change of altitude, neuralgia, bronchitis, wound of face, asthma and chronic cyanide poisoning

I know that many of these patients have recovered from the heart symptoms, and they were only placed in the list because the cardiac symptoms were so severe as to require treatment. One case not included in this list was that of a woman, twenty-seven years old, who had exophthalmic goitre with severe tachycardia. Operation on the goitre was followed by temporary improvement, but she died later from recurrence of the symptoms.

In nearly all of these cases of functional heart trouble the patient referred the symptoms very definitely to the heart, while the majority of those having organic lesions referred their symptoms in part or entirely to something else than the heart. Exceptions to this were a case of pericarditis, in which the patient located the trouble very definitely, and a case of hypertrophy with tachycardia in which the discomfort was referred to the heart.

Rheumatism was associated with the heart lesion in four children who died, and there are nine children still living in whom the heart disease was due to rheumatism. In three of these later the heart murmur has disappeared; in three others it has grown less marked. One of the cases which has recovered from the heart lesion has spent the past two years in New York, but on the other hand two children with rheumatism and mitral lesion were taken to California and one to Canada, and all three died. It is quite probable that children with rheumatism and heart disease do as well here as at lower altitudes. Where recurrence of rheumatic attacks is prevented by proper care of the child, we may expect the murmur to disappear in a fair proportion of the cases. We know that pleuritic adhesions tend to absorb and disappear; the same is true of inflammatory conditions about the appendix or the pelvic organs, and we may reasonably believe that an endocarditis which at some time may cause a murmur may later clear away to such an extent as to allow the valves to approximate each other. We would not expect a murmur to disappear in the aged, where the cause is due to deformity of the leaflets by fibrous changes or deposit of lime salts.

Functional heart troubles are relieved here the same as anywhere else, when their cause is removed. Organic heart lesions, both acute and chronic seem to get along as well in Colorado as in other localities, with the possible exception of acute dilatation, which is very fatal here. However, I am not certain but that it is equally fatal at lower altitudes. Whether dilatation complicates acute or chronic disease, or is a primary condition due to overexertion, it has proved very fatal in my limited experience.

In this series I have not included a number of cases of typhoid fever and pneumonia which apparently died of dilatation of the heart. This may be what is popularly called "heart failure." I have learned to watch the heart in typhoid and pneumonia and base my prognosis quite often on its condition. A badly dilated heart usually indicates a fatal termination, although moderate dilatation with murmur is not inconsistent with recovery. I have recently seen a woman sixty-eight years old, with pneumonia which began in the right apex, and as that side cleared it involved the left apex. She had a well-marked mitral murmur with moderate dilatation, but finally recovered. In contrast with this case, I had a male patient, seventy years old, die last week of bronchopneumonia following a chronic bronchitis of many years duration. There was a well-marked mitral murmur. Autopsy showed calcareous degeneration of the mitral and aortic leaflets; there was cardiac hypertrophy but no dilatation.

It is not uncommon to see patients suffering with cardiac asthma, who have been sent here from the east. Theoretically this is not a good place for such patients, but in spite of the high altitude, they improve if placed on proper treatment (digitalis, diet, and rest).

I wish to close my paper with the report of a recent death which occurred during operation for anal fissure. The patient was an apparently strong man of thirty-eight years. Two years ago he had been operated on in Kansas City for the same trouble and the operators then had great difficulty in resuscitating him. I examined his heart before giving the anaesthetic and heard both sounds distinctly. He did not take the anaesthetic well, but the difficulty appeared to be with the respiration rather than with the heart. He was still somewhat rigid when we placed him in the lithotomy position.

We had examined the anus and begun dilating, when, without warning, the heart stopped, and I doubt if it beat again, although we kept up restorative measures for over an hour. The anesthetic used was chloroform, and the question is—Was death due to the anaesthetic or to shock? I was unable to get an autopsy in this case. Some recent reports of such cases seem to show that they were due to fatty degeneration of the heart. This man's sister has mitral regurgitation. He had only been in Colorado ten days. Did the high altitude have any influence in causing his death? Personally, I think the altitude had nothing to do with it.

RENAL CALCULUS.

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The presence of stone in the kidney is so evident in some cases that there is no excuse for mistake in diagnosis. On the other hand symptoms may be so misleading that the gravest doubt may be entertained regarding its presence or an entirely different pathological condition may be mistaken for it. To illustrate these points I will briefly report a few cases occurring in the service of Professor Nancrede and myself at the University Hospital, with a single case from private practice. I have taken these from the past two years because they represent more accurate methods of diagnosis than were employed before that time.

Case I.—Mrs. B., age thirty-four years, housewife, married. She came to the hospital October 4, 1904, because of pain in the right side and back. The history of the present trouble is as follows: The pain in the right side is in front, extending low down, sometimes into the thigh; it is constant, with exacerbations lasting sometimes for hours, at other times for days. Patient was in bed from April to August, and during that time is said to have passed one hundred stones, some as large as the end of her little finger. She believes that the trouble began fifteen years ago, shortly after her first child was born, and since then she has been a constant user of medicines, patent and pertinent, for kidney affliction. Patient was brought to the hospital in an ambulance in a very weak condition. She was obliged to pass urine every fifteen minutes. One-quarter-grain doses of morphine were required to quiet her pain. Three or four days after entering the hospital she developed symptoms of uremia, and died thirty days later from this cause. The case illustrates the long period of the disease and a method of termination.

An autopsy revealed the following conditions: The left kidney fluctuates and contains a mass which gives erepitus. On section it presents a picture of multiple abscess cavities containing brownish fluid and masses of thick pus. There is a large calculus in the pelvis which has irregular sharp prolongations extending into the spaces between the pyramids and into the ureter. Kidney greatly enlarged. There is an abscess in the capsule of the right kidney continuous with the cavity of the pelvis of this organ, which is greatly distended. These cavities are filled with yellowish gray, rather thin fluid. There is a larger amount of working tissue in this kidney than in the other. Both ureters are dilated, their walls thickened, and the right one contains calculi. Microscopic examination shows a small amount of kidney substance present. There is acute and chronic interstitial nephritis, with marked thickening of the capsule, while abscess walls show a chronic process. The ureters show chronic purulent inflammation.

A pathological diagnosis of nephrolithiasis, hydronephrosis, chronic nephritis, and chronic purulent ureteritis was rendered.

The pathological findings in other organs are omitted as they have little bearing on the question.

Case II.—About the same time Mr. Y. entered the hospital because of pain in the region of the appendix. He gave the following history: Six years ago he had a typical attack of renal colic and passed a stone in the urine. Three or four similar attacks occurred in succession, the last one four years ago. About eight months ago he had severe dizzy spells, for which the doctor bled him. At the second bleeding the patient noticed a dull, continuous pain in the region of the appendix. There was no distension of the abdomen, no vomiting or constipation. The pain has returned at intervals with marked severity, but it is now nearly gone. There is tenderness on pressure. A week ago he noticed a dull, continuous pain in the back, between the crest of the ilium and the lower border of the ribs on the right side. The pain remained localized but there was no tenderness to touch.

Repeated examinations of the urine showed no albumin or sugar. One specimen contained leucocytes and red blood cells, also an occasional cast. There were no crystals. The radiograph gave a very fair outline of what was supposed to be a calculus.

Operation was performed by Doctor Nancrede. An incision about six inches long was made parallel to the crest of the ilium. Because of the high location of the kidney, some difficulty was experienced in bringing it down into the wound. It was firmly attached to the fatty capsule. The fibrous capsule was incised, exposing a kidney more congested than normal, with something hard in the pelvis. A needle was inserted and it came directly upon a calculus. Incision was made parallel to the long axis of the kidney, extending down to the pelvis, where three stones were found. The hemorrhage was very sharp but was controlled by passing a rubber tube down to the pelvis and suturing the kidney substance around it with heavy catgut. This tube was brought to the surface together with a gauze drain; the muscles and fascia were closed after the usual method for closing deep wounds.

The recovery in this case was slow. Pus and urine by the wound persisted for some time.

Case III.—Mr. M., age thirty-five years, farmer. This man entered the hospital because of a dull, aching pain in the left side with attacks of griping pain to the left of the umbilicus, radiating down the left side to the small of the back. The present trouble began about seven years ago with a sharp sudden pain across the bowels, which lasted but a few hours and gave way to a dull ache and tenderness about the size of a man's hand, to the left of the umbilicus above the inguinal region. The attacks were becoming more frequent of late (once a month), and he would have to remain in bed a day or two with each attack.

Urine examination shows a distinct precipitate of albumin; many leucocytes; many red blood cells; and a small quantity of epithelial cells. The radiograph presented very good evidence of stone, and an operation was advised. The usual incision corresponding to the curve of the crest of the ilium was made and the kidney located. A good-sized stone could be felt in the pelvis of the kidney. As it was impossible to bring the kidney out through the wound a small curet was pushed through the substance after incising the capsule. The stone was located and delivered with a stone forceps. A rubber tube was carried down to the pelvis and the kidney substance sutured about it. This patient made a good recovery and left the hospital eighteen days after the operation.

Case IV.—Mr. B., age forty-three years, laborer. He gave the following history: About ten years ago he had severe pain in his back, which was not so severe when he was idle. He had attacks three or four times a year. At such times his urine would be light, almost like milk, leaving a white sediment when it dried. He also suffered great pain on urination—cutting like a knife. About four years ago he noticed that there was soreness in the right lumbar region with slight swelling during an attack. About eighteen months ago he had an attack during which he first noticed blood in the urine. He was treated for this but blood did not entirely disappear for four weeks. Another attack with hemorrhage came three months later. Patient experienced no further trouble until last fall, when he had intense pain, and the blood returned, the right lumbar region was much swollen, and he was three weeks in bed. Then he was up and about for two weeks, when he was obliged to go to bed again. He says he has had occasionally a sharp grinding pain passing down from the kidney toward the crest of the ilium but has had no pain on urination for the past two or three years.

Examination shows a tumor to the right of the median line above the umbilicus, rather fixed in position but apparently not connected with the liver.

Urinary examination negative.

The radiograph gave indications of a very small stone.

Operation by Doctor Darling. An incision six inches long was carried upward and backward between the crest of the ilium and the border of the ribs. The working space was very narrow and considerable difficulty was experienced in getting an opening through which the hand could be passed. Much difficulty was experienced in locating the kidney but it was finally found toward the median line, firmly fixed, and proved to be a tumor. Nor was this all; it extended across the median line, so far as could be felt, enough to satisfy me that I was dealing with a horseshoe or single kidney with the convexity downward. No pelvis could be felt owing to the deep position of the organ. A needle was used and inserted in the direction of the supposed pelvis of the right portion, which fortunately struck a stone. An incision was made through the capsule and a small calculus was removed with a curet. There was little bleeding and the kidney wound was closed with catgut sutures.

Gauze drainage was maintained for a few days, because of the fear of infection from severe handling of the tissues. The patient made an excellent recovery without infection.

Case V.—Mr. L., age thirty-eight. Patient has a history of present condition dating back fifteen years, when he had a sudden attack of severe pain on the right side below the border of the ribs extending across to the left. He had severe vomiting about fifteen minutes after pain began. Another attack was experienced about six months later. In ninety-one attacks pain became more frequent. He had jaundice with each attack. The longest attack lasted about fifteen hours. This was about ten years ago. Recently the pain is more noticeable in the back, on the right side, passing down to the testicle. Within the last year he has noticed that the urine is dark-red in color after the attack, clearing up the next day.

Examination of a fresh sample of urine shows large crystals of oxalate of lime, a few red blood cells and leucocytes, but no casts or cylindroids. The radiograph shows a stone in the kidney.

You will note in this case the prominent symptoms of gall-stones in the early part of the history.

Operation July 10, 1905, by Doctor Nancrede. The kidney was exposed in the usual way, the capsule incised, and a blunt instrument carried down to the pelvis until the stone could be felt, which was easily removed with a stone forceps. A rubber tube was used for drainage. The patient was discharged from the hospital twenty-nine days later.

Stone in the kidney is sometimes mistaken for appendicitis. One instance of this came under my observation. A few years ago a patient was sent to the clinic during my service for an interval operation for appendicitis. The history was not a clear one to me, but I removed the appendix on his physician's diagnosis and found it apparently free from disease. Before leaving the hospital he passed a stone with the urine. The shape and size showed clearly that it came from the kidney. So far as I know he never had any return of his trouble.

Occasionally a stone may grow to large proportions without its presence being suspected. Mr. A., age twenty-nine, single, never had a serious illness until the present. About four weeks before my visit he began to complain of pain in the back on the left side, which settled just above the crest of the ilium. There was never a sharp pain or attacks of colic, but always the same dull pain. He consulted a physician who examined his urine and found a large amount of pus. He continued his work for three weeks in this condition but was advised to give up, which he did. He had some temperature, and a well-defined mass could be felt in the region of the kidney. A diagnosis of abscess was made and operation advised. The usual incision for exposing the kidney was made and the organ readily found, but owing to inflammation the capsule was with difficulty detached. It was at least four times the normal size and presented two soft spots indicating abscesses. Opening one of these a large amount of pus escaped. As there was apparently no connection between them the other was opened with the same result. A finger passed into the cavity came in contact with a stone which was removed with a stone forceps. It was more than an inch in diameter and had a projection nearly one-half inch long, evidently extending into the ureter. The largest stone of all reported gave rise to no important symptoms until four weeks previous to operation though it must have been months, possibly years, in forming. A radiograph in this case would have disclosed a fine specimen but one was not taken.

The diagnosis of renal calculus will in a number of cases be relatively easy. There will be a severe pain in the kidney region, lancinating and continuous, passing along the line of the ureter, a sudden increase in the amount of urine, and shortly after the stone may be passed. Such is the exceptional case. The symptoms of renal calculus on which the diagnosis depends may be limited to two—pain and hematuria. Pain as a symptom is not very reliable as it is not always the same or in the same locality. It may vary from a slow boring pain, such as may be experienced by the constant irritation of a large fixed calculus to the sharp, intense, cutting type which is experienced when a small stone has been caught in the opening of the ureter and is trying to make its way to the bladder. The pain may or may not be confined to the region of the kidney. Sometimes it may be referred to the opposite side. Pain is in a large measure due to mechanical distention of the kidney by blocking the ureter. The same kind of pain may be induced by kinking of the ureter, pressure of a tumor, ligature of the ureter or blocking it with a clot. The pain usually remains fixed when the stone is in the pelvis but may be reflected down to the groin and testicle. Again it may be referred over the back and loin. Little mention is made in the text-books of the pain of gall-stones being mistaken for that of renal calculus or the reverse. I have known of an operation for renal calculus where the gall-bladder was opened by a posterior incision and gall-stones removed. I also know of an instance where the abdomen was opened for the purpose of removing gall-stones and a large stone was removed from the pelvis of the kidney. In both of these cases the symptoms had been gone over carefully, the mass containing the stones could be felt, yet in neither instance was a positive diagnosis made.

Stewart noticed that in two of his doubtful cases which were verified by operation a point of extreme tenderness or sensitiveness was found about two inches below and to the left of the umbilicus where the ureter crosses the pelvic loin. He believes this may prove a symptom of importance. Hematuria always indicates a disturbance of the urinary tract and when at all severe alarms the patient. In calculus it may be continuous or intermittent, usually occurring at long intervals. Again it may be so slight as to be seen only by the microscope. Repeated microscopic examinations may be necessary to discover this symptom or make it of particular value in diagnosis. The pain may be intense in an attack of renal colic, yet without sufficient injury to the kidney to cause a flow of blood. Usually albumin is present in sufficient quantity to excite one's suspicion that it is due to blood. This associated with casts will be fair proof that it comes from the kidney.

After considering all that may be said of symptoms, the diagonsis may be completed by the *x*-ray. Stewart, of Philadelphia, recently published a paper concerning the obscurity of diagnosis in certain cases of renal calculus, where the symptoms pointed to that condition. He gave a very complete report of seven cases, six of which were examined by the *x*-ray. In only one case was stone demonstrated. This was operated upon and a stone found. One where the skiagraph was negative gave such positive evidence that the patient was operated upon and the stone found. The stone was composed entirely of calcium oxalates. Harris found that in three hundred and twenty-eight cases examined by the *x*-ray, stone was shown in fifty cases and proven by the operation. He found that calculi composed of oxalates, phosphates and uric acid, gave shadows distinctly in the order named. Smith skiagraphed twenty-seven suspected cases with a positive diagnosis in thirteen. Thirteen were negative and one doubtful. The presence of stone in the doubtful case was proved by operation. Leonard collected a series of cases and showed that the error in *x*-ray diagnosis was less than three per cent. Failure to demonstrate the presence of stone by the *x*-ray may result when the patient is exceedingly corpulent or the operator lacks the proper apparatus or the required skill. All of our cases, where the *x*-ray has shown the calculus, have been verified by operation. I have at present under observation one case where Mr. Willey has obtained only negative results with the *x*-ray. The symptom of pain is marked both as to character and location. Repeated examinations have not shown an unusual amount of blood. Should the condition persist the kidney should be explored not alone for the purpose of finding a stone but with a hope that incision of the capsule may relieve tension.

A number of the cases where the *x*-ray does not give a positive outline of stone should be operated upon, but its constant use will now and then prevent us from operating on the wrong organ in doubtful cases.

TRANSACTIONS.

WASHTENAW COUNTY MEDICAL SOCIETY.

STATED MEETING, ANN ARBOR OCTOBER 11, 1905.

THE PRESIDENT, JOHN A. WESSINGER, M. D., IN THE CHAIR.
REPORTED BY JOHN WILLIAM KEATING, M. D., SECRETARY.

REPORTS OF CASES.

A CASE OF THYPOID FEVER, WITH PERFORATING ULCER OF THE INTESTINE.

DOCTOR JOHN A. WESSINGER: The patient whose case I am about to report was taken sick on September 7, 1905, and I first saw him on the morning of September 11, four days afterward. At this time he had all the usual signs and symptoms of typhoid at that stage:—temperature

103° or a little higher; diarrhea; slight tenderness in the abdomen; anorexia; dull heavy headache; and all that train of symptoms; and the symptoms increased as those of an ordinary case would from day to day. There was nothing uncommon, nothing especially striking, except perhaps an unusual number of stools during each twenty-four hours. The highest number of stools was nineteen, and I had a great deal of difficulty in controlling the diarrheal condition. To revert a little, the very first analysis of urine gave a marked diazo reaction; there was no albumin; the specific gravity was high; the quantity was about normal. The only thing I had to contend with was the inordinate number of stools. The temperature never reached the danger point; once or twice it went above 104°, but I always kept it under control with the cold bath. The patient at no time was delirious, although he talked some in his sleep. Everything went well until the morning of September 23, or about the seventeenth day of his illness. At this time the patient had a marked chill, and of course I was apprehensive of something serious. The temperature increased after the chill, although not higher than on previous days; but afterwards it began to decrease, and on the twenty-fifth day reached normal. This alternation was enacted again on the twenty-sixth, and the situation began to look quite alarming. About 3 o'clock in the morning of September twenty-seventh, the patient was seized with considerable pain. This pain at first was limited to the rectum. He complained of inordinate pain in the rectum. and the nurse resorted to hot enemata without success. At 5 o'clock I saw him. His temperature was normal; his pulse was rapid (about 120) and rather small. He still had as his most prominent symptom, the rectal pain. The abdomen appeared somewhat more distended; there had developed slight tympanites. The patient was restless. There was no particular point at which I could elicit pain more than another. I called again soon after 6 o'clock. The temperature had risen. The rectal pain had ceased. The tympanites was more marked; the abdominal pain more marked; the peristalsis was absent; and the patient had vomited slightly. I remained until 7:30, at which time the patient had a chill, and the temperature began to rise rapidly. Two questions arose in my mind—Which could it be, intestinal obstruction or perforation? After the chill, rapid rise of temperature, and vomiting, I thought it must be perforation of the bowel. I then lost no time in deciding that the case was now a surgical one, and tried to reach Doctor Darling. The doctor did not see the patient until noon. At this time the symptoms were marked, and we felt sure of perforation, and the only chance for life was operative interference. To pass upon our opinion we decided to have Doctor Dock see the case, and he called about 1:30, only to confirm our diagnosis. The man was operated upon at 3 o'clock in the afternoon, Doctor Darling performing the operation in the presence of Doctor Nancrede. The perforations were sutured, and the weak places in the bowel strengthened. The operation was done as rapidly as possible, the details of which will be narrated by Doctor Darling. I should like to emphasize the fact that while typhoid fever belongs to the medical man, he should never lose sight of the surgical sense, ever being on the lookout for the time when surgical interference is necessary. Of the seventy-five thousand that die of typhoid fever annually, twenty-five thousand are attributable to perforation of the bowel. This being so, a great responsibility falls upon the medical attendant, by way of recognizing this pathological lesion as promptly as possible, because it is only through early diagnosis that life can be saved. The surgeons have a record of thirty per cent of cures in this class of cases. It therefore becomes our duty to fortify ourselves in a diagnostic way.

DISCUSSION.

DOCTOR CYRENUS G. DARLING: The case which Doctor Wessinger has reported conveys about as clearly to the mind the condition of perforation as any set of symptoms could. There was the sudden onset of intense pain; the distension; tenderness which was quite general over the abdomen; the chill; the general appearance of the patient; the sudden rise of temperature and then the falling back,—rising from a normal temperature present for two days, and then falling back to normal: these symptoms were plain, prominent, and unmistakable. There was no delay on the part of anyone in getting this operation performed at the earliest possible moment, so far as I can see. At this time the patient had recovered from the first shock. The incision was made to the right of the median line, and the small intestine traced back. The first loop came out of itself, and we then tried to traverse the ileocecal region. Later a small opening in the bowel sixteen inches from the ileocecal valve was discovered. It did not appear that much of the contents of the bowel had escaped; in fact, to all appearances, very little. The openings were sutured, and the abdomen washed as well as possible. An opening was made just above the anterior superior spinous process for drains. Three drains were employed—one over the intestines toward the median line, the second along the side of the colon, and the third toward the pelvic region. This was all the drainage used, and the incision in the abdomen was closed. The operation did not occupy much time, and the patient stood the operation and anesthetic very well. The temperature and pulse continued fairly well for two or three days. The distension seemed to decrease. He was treated by rectal feeding for three days. There was occasional vomiting of bile—for hours refraining, then vomiting considerably. On the third day we tried to give him a little nourishment, as he became almost unmanageable; a little water, and a little milk and limewater. The vomiting seemed to grow worse. The stomach was washed out by giving him water and letting him vomit. The patient went from bad to worse, and on the sixth day we had every appearance of obstruction. The drains were removed on the fifth day. They were clean and sweet; no bad odor present, and they seemed to come out perfectly free and clean. Death came the same as we find it in nearly all cases—from intestinal obstruction.

A postmortem was made. I did not attend, but saw the specimen. There were two or three feet of the intestine near the ileocecal valve, in which the lumen was almost obliterated. In this region the bowel seemed perfectly collapsed in the abdomen. There was no sign of giving way of the sutures, and yet this patient apparently died of obstruction. How did this take place? How does death take place in peritonitis? In a case of ordinary obstruction in which the peritoneum has not been fouled, the obstruction leads to distension, until paralysis takes place, and absorption must occur from the material within the bowel. This is one element in the cause of death. If there is perforation, we have the fouling of the peritoneum. We may be able to remove this completely, but we are especially likely to have infection of the peritoneum if the fecal matter has remained in contact with it for any length of time. The infection passing through the endothelial coat, the vessels and nerves lie very close, and must be affected by it. This may also extend to the lymphatics, affecting them, and as a result, the action of the muscular coat of the intestine interfered with. Another way in which the muscular structure of the intestine may be impaired, is by direct infection acting directly on the muscular structure. There are these two ways of directly affecting the nerve supply and muscle supply of the intestines and thus causing paralysis. The question of the collection of pus seems to have little to do with the cause of death. Sometimes we have pus in large quantities which does not seem to collect in places back of the peritoneum. There are layers of lymph tissue behind, which prevent spreading. We may have a protection formed to prevent the invasion of structures back of the peritoneum. If the pus is washed away carefully and the abdomen flushed out, these patients frequently recover provided there is no obstruction. There may be places where there is no pus, but an inflammation, and this is what seems to have taken place in this particular case. Whenever we find two surfaces opposed, we find adhesions and loops of bowel bent on themselves, and this might prevent flow along the intestine. The process is entirely independent of the suturing, provided this holds. We may get this result no matter how carefully we cleanse the abdominal cavity or how carefully we suture, provided we have the right kind of bacteria. The one that does not tend to the collection of pus seems to be more favorable to obstruction. As soon as we have complete paralysis of a portion of the intestine, we may have absorption taking place from this form of bacteria and their products, and from the material getting behind the peritoneum or in the lymphatics of the mesentery. What can be done to overcome this, I have been thinking about.

In perforation we should do the operation as quickly and as well as possible. It is often very difficult to combine these two, but we must strive to acquire the happy medium. We have to take some chances as to time and care. The only place in this case where we might have done better, might have been in washing the peritoneum. Some operators tell us that in these cases we ought to wash the whole abdominal cavity. I think the results show that this is not necessary. We must leave this to the judgment of the operator as to whether the peritoneum is fouled to a large or small extent. I do not believe that flushing would have averted the disaster in this case. This operation has suggested two or three points. I think in the next operation I should make the incision over the ileocecal valve, and proceed up from this point. In this way we avoid handling a lot of bowel. Another element is the formation of gas and its effect on obstruction. As soon as paralysis sets in the intestine becomes filled with gas. Anything coming down is met with a cushion of gas. Attempt to contract feebly on this gas and the material promptly returns up the intestine. I do not mean to say that the fluid will always stand on top of the gas. The part filled with the gas tends to be elevated over the fluid. Here we have the return of gas and fluids instead of everything passing down. The part filled with gas tends to rise on top. In opening for perforation it would be a very nice thing to open and empty the bowel, but we have not a great deal of time to waste. Again, it is a question if it is not better in some cases to suture the bowel, and through this pass a tube, through which the bowel may be emptied or gas allowed to escape. There is the question of bringing the diseased portion of bowel out of the opening; excising and repairing with a Murphy button, or suturing, or leaving an artificial anus. The statistics of operations show this to be very fatal. With regard to the thirty per cent. This is of those cases reported. There is nothing said of the number of these twenty-five thousand that have been operated upon and not reported. It is not always pleasant to report your failures. And while it is not a pleasant case to report, I feel it a duty to do so.

Doctor George Dock: The case is certainly a most interesting one. The diagnostic features have been very clearly described. I would simply like to emphasize the points of diagnosis. The pain, rise of temperature, change in the pulse, oncoming tympanites, more or less rigidity of the abdominal wall, the detection that the liver dullness had disappeared, and the peristaltic movement practically gone everywhere except a little on the left side. The case was a fairly typical one. One point of divergence was the relatively soft pulse, but the pressure might have been high. The matter of pain is undoubtedly one of the most important things. It is our duty to warn the nurse along about the second or third week to tell about any pain. Of course pain may be present from a great many other reasons, but the physician should always be notified, and the surgeon called in if in any doubt. With regard to the cause of death, one element is the probability that the patient is doomed. It is all very well to think that if operation is elected within twelve hours the patient may recover in thirty per cent. of the cases. We cannot, however, tell how much infection has taken place before discovering the perforation. In some cases there may be a rapid sticking together around the perforation; in others there may be a widespread infection. The relatives should understand that we cannot make any predictions. Ask for the earliest time to operate. We must admit that it depends upon certain elements that we cannot always determine. As I see intestinal obstruction from perforation or malignant disease, in a great many cases the obstruction is due to a paralysis of the intestine, which really causes the obstruction. In this case the patient probably had this, perhaps from a very early start. He had this paresis and not much tenderness; the appearance we often see in bad cases of appendicitis. No matter how early we operate and what the condition of the peritoneum, the result is frequently fatal. In the treatment of these cases, I have always believed that a good deal of value came from thoroughly washing out the stomach. But sometimes in spite of all you can do, the patient will die. There is an extensive paresis of the intestine which causes obstruction. Part of this shows itself by vomiting. which very often has fecal characteristics. There is a curious odor which does not resemble the odor of fecal fistula, but that of the contents of the duodenum. In another case we had that condition, and for a long time it was necessary to wash the patient's stomach out. Sometimes two or three pails of water were used, always with great benefit. In some cases this procedure, with rectal feeding, will enable the patient to outlive peritonitis. If he has a favorable case, that will help to keep him alive until he gets over the disease.

Doctor Charles B. Nancrede: The ground has been so well covered, that there are only two or three points I want to reiterate. I think that this question of paresis is something that we ought to understand a little better. Each individual portion of the bowel by its own contraction passes on its contents and relaxes, while the next portion in turn contracting passes onward that which has been delivered to it. Sometimes in obstruction from stricture, there is a tortuous rigid canal left through which a finger can be passed. I have seen the most marked symptoms of intestinal obstruction where two or three portions of the whole circumference of the small intestine had been so damaged that the muscular coat at these points was completely paralyzed, the obstruction being due to the inability of the small intestine at these points to *pass on its contents.* I have never seen a case with complete paresis recover. I have opened the bowel in a recent case, evacuating enormous amounts of gas and feces, but the bowel being paretic the symptoms recurred with fatal results. If the paresis is not yet complete this drainage of the intestinal contents may save the case, and of course until we can judge by the results of drainage none can say whether the paresis is complete or partial. When the patient has had no anodyne in a case of suspected perforation, any muscular rigidity at any portion of the abdomen is the strongest possible corroborative evidence, because a proof of some damage having been done to the peritoneum, there is a localized peritonitis. About forty years ago, Mr. Thomas, of Liverpool, was regarded as a medical crank. He contended that in many cases it was both safer and easier to relieve obstruction by removing the contents of the distended bowel *above* the obstruction, which was often produced in part by kinking of the bowel from overdistention and filling with air flatus and fluid: moreover, the contents of an obstructed bowel have been proved to be intensely toxic. He gave all the water the patient could be induced to swallow, raised the pelvis, kept the head low and encouraged the patient to vomit. He has reported a number of successes. In a case of obstruction following suturing of a typhoid perforation, I kept the patient alive by repeated washings of the stomach with the tube, until the enormously thickened Peyer's patch which I had turned in sloughed away, restoring the lumen of the bowel. The toxicity of the gastro-intestinal contents can only be coped with by their removal by repeated washings. In the successful case mentioned twelve quarts of water were used during the last washing. This patient's recovery depended upon keeping him alive by the removal of the poisonous contents of the bowel and preventing fatal paresis both from the distension and the local action of the toxins.

DOCTOR CONRAD GEORGE, SR.: I have always entertained the idea that typhoid fever belongs to internal medicine. But it seems to be a case of carefully watching until one can turn it over to the surgeon. Was there nothing done for the treatment of the fever? We did have, in ancient times, intestinal antiseptics, and writers spoke of it. Many thousands and thousands recovered, when it was understood that the causes that led to the perforation were present. We had symptoms that indicated when perforation was imminent, and when the ulcers were not healing. The medicines that stood out prominently at this time were calomel and turpentine. When one had many profuse discharges, the indication was intense action of the bacteria. This was the time for turpentine according to Wood. Last week the surgeons returned to turpentine as an antiseptic, a drug that was advocated by George B. Wood sixty years ago. I wish to take issue with the statement that in perforation there is absolutely no help. One finds evidences of perforation—profuse perforations, channels going from one portion of the bowel to another—done by nature; the stomach adherent to the bowel; new courses made by nature. Many have seen those cases in the dissecting room. I know of two cases of perforation in which the patients recovered. They were young farmer boys. No matter how bad the case appears there is still good treatment in nature. Another point. You have today one place ulcerated and you operate. Is not the whole intestine involved? Is there not liable to be another perforation? What is your operation? Can the patient stand another? Those cases in which you have hemorrhages a week apart—one ulcer healing up, the other opening up. If the case goes to the hospital, the postmortem shows that there is perforation in many places. What is the surgeon going to do in those cases? Typhoid fever perforation does not give the surgeon a very good case. Typhoid fever is rather a disease for the internist.

DOCTOR WESSINGER: I had good results from acetozone in one case, but this patient could not take it. In this patient large doses of salol, turpentine, and bismuth were administered. I always fear perforation of the bowel in this disease. There are cases of perforation of the bowel in which the patient recovers, but eighty-six per cent. of them die.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC.

STATED MEETING, OCTOBER 2, 1905.

THE PRESIDENT, JOHN J. MACPHEE, M. D., IN THE CHAIR.
REPORTED BY FREDERICK C. KELLER, M. D., SECRETARY.

READING OF PAPERS.

THE ART OF STIMULATION.

DOCTOR MORRIS MANGES read a paper bearing the above title. He said in part:

The first thing to bear in mind is the difference between direct and indirect stimulation. Most of us think of direct stimulation only, but it would be well to bear in mind the indirect methods, if only for the reason that if they do no good they do no harm. The old-fashioned hot saline enemas not alone produce the same effect as wine or whiskey, but also have a very decided effect upon the vasomotor centres of the abdomen, which, as is well known, are widely involved in the failing circulation.

In considering stimulation the heart must be considered as only a part of the whole circulatory system, and not the circulatory system alone, but the entire individual, must be taken into consideration. For instance, what is the use of stimulation when the primary fault is not due to circulation, but to insomnia? He recalled one patient, upon whom a colostomy had been performed, who was very ill and much depressed for no apparent reason. There was failing circulation. The patient had an idiosyncracy for morphine, and bromides had excited her. He ordered veronal, twenty grains, in hot saline solution, per rectum, and in half an hour the patient was quiet and the next morning improved. He was sure that if routine stimulation had been practised, it would have caused the woman's death. What she needed was rest. This case illustrated what he had always claimed regarding stimulation. What is the use of whipping a tired horse with a heavy burden until he is relieved of part of the load? Stimulation should be resorted to only after the burden of the overworked heart has been lessened by removing all possible causes of failing circulation.

Many physicians, when called to see a case of pneumonia, typhoid fever, or cardiac affection, immediately begin the routine stimulation usually prescribed in such cases. This is a great error. Stimulation should not be resorted to until it is needed. The use of alcohol, for instance, in a case of beginning pneumonia, often whips up a tired heart almost to the point of exhaustion. The routine use of strychnin early in typhoid fever often hinders more than it helps. He recalled the case of one patient who was making a good recovery from typhoid fever; his temperature was on the decline, but he was restless and nervous and began to throw himself about in bed and could not be controlled. He was suffering from too much strychnin. Stimulation should be resorted to only in case of a marked change in the patient's condition.

Many pour drugs into a patient without being sure that he obtains the benefit intended from them. The stomach is a relaxed bag, and the more that is poured into it, the greater the mixture taken out. The hypodermic method gives the quickest and surest results. Again, the action depends upon the drug used. If one desires quick stimulation, camphor, which acts almost immediately, should be administered. Strychnin requires a certain length of time, and digitalis even longer before it is absorbed. Finally, all instructions for stimulation should be left in writing. The responsibility belongs to the doctor, and he has no right to ask the nurse to assume it in such a case.

DISCUSSION.

DOCTOR JOHN A. BODINE: Frequently a patient will regain consciousness from an anesthetic just sufficiently to appreciate his surroundings, and then there will be a paralysis of the vasomotor centres and dilatation of the abdominal veins. All the blood will collect there and the patient will collapse and perhaps die. I have seen this occur on several occasions, and think it not due to the operation, but to fear.

DOCTOR DANIEL A. SINCLAIR: I have prescribed veronal and had several slight accidents from its use. One patient was recovering from operation and was able to be out of bed, but was unable to sleep. The administration of veronal resulted in unconsciousness for about four days. Eventually the patient recovered.

DOCTOR J. RIDDLE GOFFE: The subject of Doctor Manges' paper is of great interest. If there is one thing the medical teachers of the present day should emphasize it is the danger of overstimulation in cases of heart failure from shock. I agree with the speaker in regarding shock as a paralysis of the vasomotor centres and an overstimulation of the spinal centres. The irritation in the latter causes a spasm of the arterial system, including the heart, thus driving the blood from the heart and arteries into the veins, which are relaxed and distended owing to the paralysis of the sympathetic centres. All the remedies and methods suggested by Doctor Manges are excellent but, after all, the sheet anchor in shock is morphin. It is the routine order in the Polyclinic Hospital, in my service, to give to every patient subjected to operation, unless special instructions to the contrary have been mentioned, one-fourth grain of morphin hypodermically as soon as the patient begins to recover from the anesthetic. This prevents shock and pain, gives the patient a comfortable recovery from the anesthetic and a good night's rest. No more morphin is allowed unless especially ordered. In severe cases of shock saline injections or saline infusions are also employed.

DOCTOR ALBERT KOHN: In pneumonia and typhoid fever the patient should be turned from one side to the other daily as a matter of routine treatment. If a pneumonia patient remains in the same position for several days the posterior portion of the lungs will be in a state of congestion, and thus take away from the heart strength which it could well use, and which could be retained by persistent change of gravity. In rectal stimulation, one should be sure that the rectum is in condition to absorb the medicament. If eight or sixteen ounces of hot fluid are injected and returned unchanged in fifteen minutes some other channel must be found through which to accomplish the desired result. Nasal stimulation is most evanescent, and must be frequently repeated. Delirious patients often refuse stimulation in any form, and it is customary to hold them quiet bodily while the operation is being performed. I think this very unwise, and have often seen patients fall back dead as a result of the strain to which the heart was thus subjected. When the right heart is suffering from overaction and the left heart from underaction the abdominal distention which acts upon the right heart must be reduced. Shock is an overstimulation of the spinal centres, which results in a paralysis of the vasomotor centres accompanied by bleeding into the abdominal veins. Morphin relieves it by lessening the contraction of the whole blood system and thus allowing an equalization. This action is produced by no other drug.

DOCTOR P. R. BEAL: One form of stimulation is evolved by violent pulling out of the tongue. In typhoid fever stimulants should not be given until needed, but this does not apply to tonics, which should be given early in the disease. Often six hours' rest will do more for an exhausted patient than any stimulant.

DOCTOR MANGES: Morphin in my opinion is the most powerful of stimulants in a failing circulation due to shock. This drug gives the heart, and indeed the whole body, a chance to get its bearings, and then strychnin may be used in small doses three or four times a day, and muscles that would not have responded to the strychnin at first will respond promptly when it follows a dose of morphin. I think that one one-hundredth of a grain of nitroglycerin, if properly given and repeated often, would give much better results than larger doses repeated less often. Some people respond to veronal very quickly while others have an idiosyncracy for it. One could not always hope to obtain the expected effect upon administering a drug, but should be content to put up with a great many disappointments.

REPORTS OF CASES.

MITRAL STENOSIS AND REGURGITATION.

DOCTOR BEAL: I desire to show two cases with mitral stenosis and one with mitral regurgitation. My reason for showing them is because many doctors do not know whether the murmur which accompanies such lesions is systolic, presystolic or diastolic, or where it occurs in the rhythm. A murmur caused by mitral stenosis must be presystolic, and only that, and cannot occur at any other time. To determine the time of a murmur, it is absolutely necessary to differentiate the first heart sound from the second. When a murmur is heard at the apex, the second sound is louder at the base. During diastole the blood is simply flowing because it has no reason to stop. Systole begins in the great vessels, even above the auricle, the wave of contraction passing downward toward the apex of the heart. As this wave passes along the auricle, there is just enough muscular fibre in the auricular walls to hasten the passage of the last of the blood through the mitral orifice. The instant this wave reaches the ventricle, the mitral valve closes with a snap, and at the same time the wave of contraction passes along the muscular walls of the ventricles, flopping the heart, by a corkscrew motion, against the chest wall. The first sound of the heart, therefore, is composite, being caused by the muscular contraction itself and by the striking of the apex against the chest wall. The second sound is caused only by the closure of the pulmonary and aortic valves. It is a sharp click, made up of only one element. Pathologically, when a mitral stenosis is present, the orifice between the auricle and the ventricle is narrowed, but never sufficiently so to cause a murmur continuing through diastole, for the simple reason that the patient would not live long enough for this to occur; but there is sufficient narrowing so that when the auricle contracts, just before the closing of the mitral valve, it hurries the last of the blood from the auricle into the ventricle, and striking the wave of contraction, causes a murmur. The instant the wave of contraction reaches the valve, the latter closes, shutting off the stream of blood from the auricle into the ventricle, and that causes a murmur, thus explaining why the murmur is presystolic or occurs just before and up to the first sound of the heart or the closure of the mitral valve. A mitral stenotic murmur is not transmitted anywhere but is heard best close to its origin over the left ventricle, for the reason that a murmur is always transmitted in the direction of the blood stream that causes it, and the blood stream that causes this murmur is stopped by the closure of the valve; in other words, the murmur dies at its birth.

EPITHELIOMA OF THE BLADDER.

Doctor Daniel A. Sinclair: I wish to show a patient seventy-four years old, with epithelioma of the bladder. About two years ago he noticed that he had to void urine more frequently than normal by day and four or five times during the night. Moving about aggravated this condition. There was no pain at this time. A few months later urination became more frequent and quite painful. The pain was of a sharp and burning character, confined to the region of the bladder, more severe at the beginning and during urination, coming gradually and disappearing in the same manner. These symptoms gradually increased until he voided urine every hour and sometimes oftener during the day or when exercising. He noticed blood in the urine about three weeks prior to the time he was first seen by the speaker. At first, on account of the patient's age, prostatic hypertrophy was suspected, but on the passage of a catheter, no residual urine was found, and an examination per rectum failed to show enlargement of the glands, but at the base of the bladder, on the left side, a hard mass was felt, about three inches in its longest diameter and oval in outline. Examination with a stone searcher gave the impression that a stone was present, but that it was encysted. Striking the mass with the end of the stone searcher gave the impression of striking a piece of wood covered with a thick cloth, but on withdrawing the searcher a few inches and pushing it back again against this mass a distinctly gritting sensation was imparted. Therefore a diagnosis of impacted stone was made. A cystoscopic examination was impracticable, as the patient was weak, was suffering severe pain, and there was profuse hermaturia, which would have interfered with such examination. A suprapubic cystotomy was performed, and when the bladder was opened and the finger introduced, a mass three inches in its longest diameter was noted covered by a layer of phosphates, the latter accounting for the sensation imparted by the stone searcher. The condition was immediately recognized as one of malignant growth, it having a broad firm base, being extremely hard to the touch, and immovable. A small section was removed and subjected to microscopical examination by Doctor Jeffries, who reported epithelioma.

PENILE HYPOSPADES.

Doctor Daniel A. Sinclair: I also wish to show this patient, thirty-five years of age, and married. When first seen the urethral opening was about one and one-fourth inches from the tip of the glans. The false meatus flared open, and between it and the urethral opening a band of tissue about half an inch broad existed. A perineal cystotomy was first performed for bladder drainage. The corpus spongiosum was freed according to the method of Doctor Beck, and the urethra implanted in front of the aforesaid band behind the glans penis, lengthening the urethra by about half an inch. Recovery was perfect.

EXCISION OF THE ASTRAGALUS AND TENDON GRAFTING FOR CLUB-FOOT.

Doctor Paul DeWitt: I desire to show a patient who had been operated on by Doctor R. H. M. Dawbarn for equinovarus of so marked a type that he walked entirely on the dorsum of the foot, the plantar side not touching the ground. Through a semicircular incision on the outside of the foot the astragalus was removed and tenotomy of the tendo-Achilles was performed. Through an incision on the inner side one-third of the thickness of the tendo-Achilles at the level of the internal malleolus was grafted upon the tendons of the tibialis anticus, extensor longus digitorum and extensor longus pollicis. Through this incision the peroneus brevis was detached and grafted into the two outer slips of the extensor longus digitorum. The peroneus longus was left untouched. In infancy the patient suffered from anterior poliomyelitis, which caused paralysis of the nerves supplying the anterior group of leg muscles. These grafts were made to supply the anterior group of leg muscles with nerve supply from the healthy posterior group. The operation was entirely successful, the patient walked firmly, with little limp, and was able to move his toes.

MALGAIGNE'S OPERATION FOR REMOVAL OF THE LOWER LIP.

Doctor DeWitt: I also wish to show a patient on whom Doctor Dawbarn had performed Malgaigne's operation for removal of the lower lip, removing a little more than the lip itself. Malgaigne's operation is as follows: The first incision is made at a corner of the mouth and extends about two-thirds of the distance to the angle of the jaw. The second incision is made almost parallel to the first but slightly divergent under the jaw. At the posterior end of this incision a triangular notch about half an inch in length is made to prevent the puckering which would otherwise occur when the sutures were inserted. To preserve the vermillion border of the lip the first incision is carried only to the mucous membrane, which is dissected up and brought over to form a covering. Doctor Dawbarn's operation differed from that of Malgaigne in three respects. First, instead of making a triangular notch at the posterior end of incision number one he made it nearer the nose, so that the wrinkle would hide the scar, and also to avoid the danger of injury to Stenson's duct. Second, incision number two was more divergent and was carried further down the neck, so as to allow a wide field for completely dissecting out the submaxillary and sublingual glands. Third, relaxation button-sutures were applied in such a manner that the sutures did not penetrate the skin, thus leaving no scar. The sutures were carried from the inner side of the mouth only to the cuticle, then out again to the inner side of the mouth, across the wound, in again to the cuticle and then out to the mucous membrane. The operation was entirely successful, leaving so small evidence as to be almost unnoticeable except when the patient talked, when a slight contraction was apparent.

ORIGINAL ABSTRACTS.

MEDICINE.

By GEORGE DOCK, A. M., M. D., D. Sc., Ann Arbor, Michigan.
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AND
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PROFESSOR CELLI'S ANNUAL REPORT OF THE ITALIAN SOCIETY FOR MALARIA-INVESTIGATION.

The Report for 1904-5 (*Centralblatt f. Bakt. Parasitenkunde*, et cetera, 1 Abth, Bd. 37, Referate, page 220) is as interesting as usual. A résumé of the more important results shows the scope and value of the work. Studies were made in regard to the diagnosis of latent malaria (autolytic processes in the blood-serum) but without revealing the forms that maintain the recurrences. It was clearly proved that in all epidemics recurrences are more numerous than fresh infections. The number of anopheles is not proportional to the number of cases of fever. The use of quinine furnished by the government has been of the greatest value. It is cheap, easily obtained, and readily taken, and the former prejudice against quinine is being overcome. In the year 1904-5 fourteen thousand and seventy-one kilos, or over a ton and a half of quinine, were sold. Sterilized vials of solutions for subcutaneous injection are also sold. [In Italy many remedies used hypodermically are sold in sterilized solutions, with obvious advantages.] For cases with gastric disturbance tablets of quinine bimuriate are supplied. Extensive experiences show that for the radical treatment of recurrences quinine is superior to all other remedies. Along with this, proper nourishment is of cardinal importance. Celli's method of prophylactic treatment was found most efficient, forty centigrams daily for adults, or half that dose for children.

The mechanical prophylaxis, by screening, proved to be very useful, as before. It is still confined almost entirely to certain railroad lines (stations, workmen's houses, et cetera). Exterminations of anophiles is practicable only in small marshes, but the combination of agriculture and drainage is quite promising. The inportance of persistent work on all possible lines is shown by the fact that in Italy, in the fifteen years following 1887, the average death-rate from malaria has been fifteen thousand, never less than eleven thousand. From 1902, when the government took over the sale of quinine, and made it available for the poorest, the death-rate has fallen to about half the former rate. G. D.

SURGERY.

By FRANK BANGHART WALKER, Ph. B., M. D., Detroit, Michigan.
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CHRONIC GASTRIC AND DUODENAL ULCER AND ITS TREATMENT.

Recent studies have shown that gastric and duodenal ulcers exist much more frequently than their recognition has indicated. The findings even postmortem have not tallied alike in different hospitals showing that little is yet known of this serious disease.

In the *Journal of the American Medical Association*, Volume XLV, Number XVII, K. J. Mayo handles this subject in a masterly manner. Of the nearly eight hundred cases of stomach and duodenal disease which he and C. H. Mayo have operated upon during the last fourteen years, three hundred and eighty-four were for gastric ulcer and eighty-four for duodenal ulcer. Of two hundred and thirty-one cases seen from January 1, 1903, to July 1, 1905, one hundred and fifty-eight were gastric, sixty were duodenal and fourteen were duodenal and gastric. Of the seventy-four duodenal cases fifty-five were males and nineteen females. In the stomach cases the pyloric end was usually involved and the ulcers were frequently saddle-shaped, riding the lesser curvature and in twenty per cent. multiple. In the duodenum the first two and one-half inches are always involved well above the entrance of the common duct with its alkaline discharges, and the ulcer extends up to the pylorus or within three-fourths of an inch of it. In only three instances could more than one duodenal ulcer be shown. Nearly all the duodenal and two-thirds of the total number of ulcer cases gave evidences of the involvement of all the coats of the organ and of cicatrization in some part of their extent. These ulcers the author called indurated. In contrast he calls another variety the nonindurated, a term he applies synonymously with medical and clinical ulcer. Of the nonindurated ulcers he makes two classes: (a) the mucous erosion of Dieulafoy and (b) the peptic and fissure ulcer. Eighty of the two hundred and thirty-one cases previously mentioned were nonindurated, fifty-six being females and twenty-four males. He also mentions having verified the socalled "sentinel" ulcers.

In referring to treatment he advises the continuance of medical treatment for the neurasthenic unless the signs and symptoms of ulcer are distinct. Pyloric spasm is little understood. Operation is not advised in any case of acute ulcer, although perforation, hemorrhage and grave obstruction may compel its speedy performance. Operation in chronic ulcer and associated conditions is not advised until prolonged medical treatment has failed to permanently cure. Operation is advised in all cases of stagnation and retention of food depending on mechanical causes such as pyloric obstruction, and in cases of exhausting hemorrhages. Operation is also advised in those chronic cases with acute exacerbations, in whom frequent relapses with their attendant disabilities prevent the patient from the enjoyment of good health.

In technique the author considers gastrojejunostomy made on a line perpendicular with the cardiac orifice of the stomach to furnish the best drainage. Next to this method he considers the operation of gastroduodenostomy, after Finney, to be of greatest value. Rodman's operation of complete excision of the entire ulcer-bearing pyloric end of the stomach with independent gastrojejunostomy he believes will gain in favor. In concluding the author calls attention to the fact that nearly one-third of the cancers in the human body are in the stomach. In the last forty cases operated upon the mortality has been reduced to five per cent.

F. B. W.

GYNECOLOGY.

By REUBEN PETERSON, A. B., M. D., Ann Arbor, Michigan.
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MALIGNANCY IN UTERINE MYOMATA.

Lewis (*American Journal of Obstetrics*, October, 1905) offers his conclusions regarding the appearance of malignant changes in uterine myofibromata. Sarcoma may develop from the cells of the benign tumor of the uterine wall or from the adventitia of the blood-vessels running through the neoplasm. Soft myofibromata with a preponderance of muscle cells are more liable than hard fibroids to undergo sarcomatous change. Polypoid sarcomata develop from the endometrium. The process of "sarcomatous degeneration" of fibroid tumors is looked upon by Beyra as a true metaplasia.

The signs and symptoms of sarcomatous change are rather characteristic. The fibroid may have been present for many years, and suddenly undergo rapid growth. If the tumor is submucous pieces may be cast off from which the diagnosis is easily made. The interstitial and subserous growths become locally softened. Cachexia is soon apparent. Sarcomatous degeneration usually develops soon after the menopause. The malignant change usually occurs in the substance of the fibroid and infiltrates the myomatous tissue.

Carcinoma, being a much more common neoplasm of the uterus than sarcoma, it naturally follows that carcinoma more often accompanies fibromyomata. Carcinoma may develop from an adenocarcinoma of the body of the uterus or from the epithelial remains of the Wolffian ducts. The author quotes Richelot as saying that fibromata predispose to cancer by stimulating an epithelial overgrowth. Actual invasion of a fibroid by carcinoma cells is rare. The two neoplasms occur together accidentally, although one may predispose to the other.

From the statistics of a number of writers, the author concludes that uterine fibroids are accompanied by malignancy in 4.75 per cent. of the cases. This percentage should be considered in advising treatment for fibromata.

Operative measures should be resorted to reasonably early in the history of a fibroid of the uterus, otherwise we may be too late if we wait for symptoms of malignancy. The choice of operation depends on the location and size of the tumor. C. G. P.

OBSTETRICS.

By WILLIAM HORACE MORLEY, PH.B., M.D., ANN ARBOR, MICHIGAN.
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POSTPARTUM HEMORRHAGE.

JOSEPH T. JOHNSON (*American Journal of Obstetrics*, September, 1905) discusses this subject with special refernece to the treatment.

It would be a comparatively rare occurrence, if it were not for mismanagement of the third stage of labor, manifested by a desire for a hasty termination of this stage. The three chief causes for the hemorrhage are atony of the uterus, retention of a portion of the secundines, and laceration involving vessels of some size, more often the circular artery of the cervix.

The first step in the treatment is to recognize the cause. Inspection of the membranes will exclude retention, a hard, contracted uterus will exclude atony, and an inspection of the cervico-vaginal parts will show a laceration if present. The atonic condition is often secondary to the obstruction of the os by a retained clot, which must be removed before other measures will be of avail. Where there is a history of severe hemorrhage in previous confinements, the author prepares for any repetition of this by having in readiness a Faradic battery. One electrode placed over the fundus and the other held in the hand causes an immediate contraction of the uterus and gives control of the hemorrhage. Next in excellence for treatment, he places the hot douche, and then the gauze pack. He believes that in the haste incident to the occasion one's asepsis is imperilled by attempting to pack with gauze and subsequent sepsis liable.

However, the main issue he points out is to use whatever means are at hand in the most efficient manner. Do not lose your head. Act quickly.

W. M. S

EDITORIAL COMMENT.

ANOTHER CURE PROCLAIMED FOR CONSUMPTION.

Professor Emil Adolph Behring, of Berlin, eminent scientist and discoverer of diphtheria antitoxin, recently made informal announcement before the International Congress of Tuberculosis, of a cure for consumption. Since the doctor failed to divulge the nature of the cure, or to impart information other than that he had obtained excellent results in the treatment of tuberculous animals, implicit confidence cannot be reposed in the reported efficacy of the agent. While the proclamation is receiving almost general condemnation from the English scientists, French and German workers, who believe Behring to be a careful and conscientious investigator, are inclined to view the alleged cure with the utmost sincerity. The fact is emphasized by the critics that a complete disclosure of the discovery was not revealed, and this is considered sufficient evidence of doubt in the mind of Behring to render his declaration inconsequential. It is, however, barely possible that the doctor desires to perfect the cure before placing it at the disposal of the profession, and since he has signified his intention to fully detail his method within a year, the world will await the report with due expectancy. Rumor declares, however, that Behring expects to reap rich financial remuneration from his efforts, and that he is withholding a complete report until an opportune time presents, yet it is hardly probable that a man of Behring's scientific attainment would resort to sordidity, and since it is intimated that he refused a reward of forty thousand dollars for immediate divulgement, the fact of his sincerity is further evidenced.

Behring first sprang into prominence when he advanced the theory that the blood serum of artificially immunized persons, when injected into normal beings, had the power of rendering the latter likewise immune, and it was while working along the lines of this hypothesis that he devised and perfected the antitoxin treatment of diphtheria. Some time prior to this discovery, however, Sewall, of the University of Michigan, conducted a series of experiments, with snake venom, tending toward the immunization of pigeons, and the report of the investigations, which was published in the "Transactions of the International Congress of Physicians," for the year 1888, indicate that he anticipated the serum treatment of disease. Until 1891 Behring was an obscure practitioner, being also connected with the German army in the capacity of surgeon. In 1894 he was elevated to a professorship in the University of Halle, and subsequently became widely known through his numerous contributions to medical literature. Four years ago he shared the Nobel Prize with Roux, the eminent bacteriologist. Doctor Behring not only enjoys fame in medical circles, but likewise occupies the position of acting privy councilor to the German Empire, with the title of Excellency.

METALLIC DESTRUCTION OF MICROÖRGANISMS.

While the efficacy of radium as a therapeutic agent has undoubtedly been overestimated, recent experiments of several German investigators with the metal, on disease-producing bacteria, will be of interest to the profession. The apparatus employed consisted of flasks containing solutions in different strength of barium chloride and radium. The charged flasks were in direct communication by means of glass tubing with receptacles which had been impregnated with the organism under observation. Needless to say the mechanism was free from contact with the outside atmosphere, and was so constructed that it was possible to transfer the air within from flask to flask. Because of its luxuriant colonies and excellent cultural characteristics, the bacillus typhosus was employed in most of the studies. The air charged with the radium emanations was forced into the culture flask twice daily, and allowed to act on the bacillus for from ten to twelve minutes each time, the process being repeated on three consecutive days. Notwithstanding the control cultures employed in connection with the investigations exhibited profuse colonies, the inoculated tubes failed to produce any growth whatsoever, and even when disconnected with the flask containing the radium and allowed to stand, no colonies were perceptible after a period of twenty-four hours, which demonstrated beyond doubt either marked attenuation or the complete destruction of the organism. Likewise the incubator failed to produce results after a period of four days. The vibrio of cholera and the Loeffler bacillus after being subjected to the above process were incapable of generating colonies when kept at body temperature for a like period, showing that these organisms and the bacillus typhosus are similarly affected. It might be stated that metallic substances of all kinds have a deteriorating influence on bacterial life. Novy, professor of bacteriology in the University of Michigan, has demonstrated that metal bars placed in flat cultures more or less inhibit the growth of organisms in the immediate vicinity of the metal, while the bacteria near the edge of the culture dish develop luxuriant colonies.

THE THERAPEUTIC EMPLOYMENT OF TUBERCULIN.

A RECENT contribution to the *British Journal of Dermatology,* by Sir T. McCall-Anderson, pleads for the more general employment of tuberculin by physicians in the diagnosis and treatment of consumption. The author regrets that the enthusiasm, which followed the discovery of the product by Koch, has so sadly depreciated, and opines that unskillful and indiscriminate employment of the agent has led to its practical disuse. In cases of cutaneous tuberculosis desirable results are usually obtainable by an intelligent usage of tuberculin, and its injection in cases of facial lupus subsequently leads to the discovery of other foci in the event of their presence. After having employed tuberculin since its discovery the author advocates the observance of several rules: In the adult the initial dose is usually one-half cubic centimeter in one to one thousand, while it is sometimes advisable to inaugurate treatment with as small a dose as one-fourth cubic centimeter. Provided the first application fails to render the desired results it is well not to increase the amount of tuberculin for the second application, since the reaction in the second case is sometimes more pronounced than in the first. In the event of severe physical effects a long interval should elapse before a second dose is administered. Since the tissues after repeated application become immune, so to speak, undue precaution is not necessary toward the final stages of the treatment. While an initial dose of one-fourth cubic centimeter of tuberculin may cause a rise of temperature to 104°, a final dose of even one cubic centimeter may cause no thermal change whatsoever. The paper is not a discouragement of the methods of treatment now vogue, many of which are excellent, but is merely a plea for an agent which in certain cases may be employed advantageously.

ANNOTATIONS.

SANITARY CONDITIONS IN THE CANAL ZONE.

GORGAS and Carter, of the Sanitary Commission of the Canal Zone, have inaugurated their official career in the region by executing very thorough and extensive work in the field of tropical hygiene. Chairman Shontz, in his recent report, gave utterance to the fact that sanitary measures were the chief requisite in making the country a suitable place of abode. A little more than one year ago Panama was subject to repeated epidemics of yellow fever, beriberi, and plague. Her streets were filthy with garbage and refuse of all descriptions, and there was not a suitable hospital in the republic. Verily, the region was utterly an unfit place for human habitation. Now, however, under the persistent efforts of members of the commission the country is rapidly developing into an ideal residence region. Two excellent hospital systems have been inaugurated—one at Colon, and one at Panama, these cities being situate at the extreme ends of the country so that people in the intermediate territory are readily accessible to medical attendance. An effort has been made at mosquito extermination and very favorable results have been attained along this line, while excellent sewerage and water systems have likewise been established. Steps have lately been taken to improve the food supply, and altogether the work of the commission thus far has been indeed flattering.

THE SPIROCHÆTA PALLIDA IN SPECIFIC DISEASE.

Apropos the various experiments which have been conducted for the purpose of ascertaining the relationship between syphilis and the spirochæta pallida, the work of Kraus and Prantschoff, recently chronicled in foreign literature, is of vital interest. These investigators made microscopic examination not only of syphilitic blood but of normal blood as well. The organism was demonstrated in all the syphilitic patients under observation, while in the blood of unaffected persons no trace of the spirochæte was apparent. In summarizing, the doctors are not reluctant in declaring the organism the causative factor in the disease.

THE PLIGHT OF RUSSIAN PROVINCIAL JEWS.

Niemanov, a European economist, in an article to the Russian lay press, exposes the frightful plight of the Hebrew race in the Empire. The vast majority of the Jews, of whom there are six millions, seek residence in Poland and provincial territory, only about five per cent living in Russia proper. What has been written of the unhygienic living conditions and miserable existence of these people, declares the writer, has not been exaggerated. The average Jewish worker is barely able to obtain a sustenance, two roubles (seventy-five cents) being the usual weekly remuneration for common labor. The ordinary food of the class consists of dry bread and water. The tenor of the article is to the effect that meager nourishment is asserting itself in undeveloped and sickly bodies, and in view of present conditions the author ventures consequential extinction of the race.

THE BACTERIAL ELEMENT IN BERIBERI.

Hamilton Wright, director of the department of medical research of the Federal Malay States, who has had abundant opportunity to observe and study beriberi in its most pronounced type, recently contributed a series of invaluable papers, detailing the results of his studies, to the *Journal of Tropical Medicine.* The author chronicles experiments reaching over a long period of years, and derides the idea that faulty food is the etiologic factor in the malady. He intimates that bacterial invasion of the gastroduodenal portion of the intestine is the direct cause of the disease, the bacterial toxins producing atrophy of the nerve cells and thus inducing the paralytic symptoms peculiar to the condition. The period of inoculation may extend over a decade of days, while the active stage of the disease consumes a period of from a few days to a few weeks. Nothwithstanding the patient may survive the active form of beriberi there invariably follows a chronic stage, resultant from the lesions produced during the active period. The disease is transmissible by contact with the secreta of infected persons, and since Wright's idea of infection by bacterial invasion is merely theoretical, much arduous work is necessary to establish conclusively the tenability of his claim.

INTERNAL EAR DISEASE AND LIFE INSURANCE.

Barnhill, in a late paper before the American Association of Life Insurance Examining Surgeons, discusses "Suppurations of the Temporal Bone and their Practical Relation to Life Insurance." After dilating at length upon the advisability of accepting persons thus afflicted, the argument is advanced that as a general thing such cases are followed with complete recovery. The following phases were introduced and discussed in the paper: "(1) What pathological condition in the diseased ear should be regarded as sufficiently dangerous to reject the applicant? (2) Under what circumstances as to the condition of the diseased ear may the applicant be considered a safe risk? (3) Under what conditions of the diseased ear should the applicant's case be postponed, and when after medical or surgical treatment should insurance be safely issued?" While the doctor classes the cases as safe risks so far as the company is concerned, he advises that each case be systematically studied by the physician.

MEDICAL NEWS.

THE LATEST ELIXIR OF LIFE.

Professor E. J. Kibblewhite, of London, announces glacial acetic acid as a remedy for prolonging youth into that period of life known as senility. This gentleman declares that the new elixir works like a charm, and cites his own appearance to substantiate the claim. His argument in favor of the acid treatment is as follows: "It has long been noticed that the animals remarkable for their longevity have the faculty of renewing, at intervals, the skin, or shell, or other portions of their frame, in which the waste of the body becomes accumulated. After a certain age apparently the human body fails in the function of removing the dead waste of organic matter taken into the body. These substances accumulate in such quantities that they cannot be disposed of, and all ordinary efforts to remove them fail, just as the careless engineer fails, who does nothing but pour oil into his engine clogged up with dirt. If this dead waste be dissolved out of the body, the blood will do its work again, renovating the living parts again, as in youth. Otherwise it goes on, gradually clogging up the drain-pipes. Hence, as men grow old, their skins harden and become like parchment, filled with indurated cement-like deposits which can be felt in the flesh of old men. Sixteen years ago, after a good deal of previous experiment, I took up the use of glacial acetic acid, solid at forty degrees as a means of dissolving the dead waste of the skin, using three parts of the acid to one of the water. I shampooed the body vigorously with it, and then got into bed damp. I found in my own case, as well as in others, that this treatment cured gout and banished all the aches and pains of fatigue."

THE DEMISE OF A PROMINENT KENTUCKY PHYSICIAN.

Doctor John Arvid Ouchterlony, professor of medicine and clinical medicine in the Kentucky School of Medicine, and prominent member of the Southern profession, died at his home in Louisville, October 9, of pneumonia, aged sixty-seven years. Doctor Ouchterlony was the son of a Swedish army officer, and first saw the light of day at Gothenberg, Sweden, June 24, 1838, in which country he obtained his academic education. He emigrated to the United States in 1857, and one year later began the study of medicine, receiving the degree of Doctor of Medicine from the University of New York in 1861. He began his medical career as physician to a boys' school in Pennsylvania, but subsequently, in 1862, accepted an assignment as surgeon in the Union Army. Early in 1863, while in Mississippi, he contracted dysentery, and for some time his life was in jeopardy. He was sent North, and on reaching Louisville his condition improved and he decided to locate here after leaving the army. He resigned his surgeoncy in 1865, having during the previous year received the appointment of lecturer on Clinical Medicine at the University of Louisville. In 1869 he was associated with several other promoters in establishing the Louisville Medical College, in which institution he occupied the chair of Materia Medica, Therapeutics and Clinical Medicine. In 1876 he abandoned this post to accept the deanship of the Kentucky School of Medicine, likewise filling the Chair of Medicine. In 1883 he was appointed to the professorship of Therapeutics and Clinical Medicine at the University of Louisville, and later became professor of Medicine and Clinical Medicine in the same institution, which connection he continued to the time of his demise. Doctor Ouchterlony was an ardent society worker and occupied many high positions, the most notable of which was the vicepresidency of the American Medical Association. In 1890 he was elevated to the presidency of the Kentucky State Medical Society, and in the same year the Michigan State Medical Society added his name to its honorary membership roll. He was the recipient of many honors from societies and institutions, and royalty took occasion in 1891 to show its appreciation of his services by raising him to Knighthood, King Oscar making him a Knight of the Polar Star. In 1892 he received the honorary degree of Doctor of Laws from the University of Notre Dame, and in 1894 Pope Leo XIII raised him to membership in the Order of Saint Gregory the Great. Doctor

Ouchterlony was a member of the editorial staff of this journal during the early years of its existence, and his translations from Scandinavian literature for its pages were the first published in American monthly medical journals. He was a man of literary tastes and contributed much valuable material to medical literature. He will be sadly missed by the profession of the South.

MINOR INTELLIGENCE.

THE demise of Doctor Ménière, director of the National Deaf and Dumb Asylum of Paris is reported.

THE Amalgamation of the Medical College of Virginia with the University of Virginia is contemplated.

CHOLERA is epidemic in the vicinity of the Russo-German frontier and the German authorities are adopting stringent preventive measures.

THE Mexican Superior Board of Health reports but seventy cases of yellow fever for the past year. At present there is not a case in the republic.

THE Pennsylvania Health Department has provided for the establishment of five hundred stations at which physicians may procure diphtheria antitoxin free of charge.

THE Baltimore College of Physicians and Surgeons is the defendant in a damage suit instituted by the wife of a patient upon whom autopsy was performed without her consent.

THE legitimate practitioners of Paris have united for the suppression of "witch-doctors," "bone-setters," "faith-healers," and all who are illegally engaged in the practice of medicine.

THE Northwestern University Medical School, which has hitherto been only affiliated with the Evanston University, has lately been accepted as an integral part of the corporation.

THE erection of a $30,000 club house is contemplated by members of the medical profession of Kansas City, Missouri. Arrangements for the organization of a social club were recently consummated.

A SUIT for $50,000 damages has been instituted against the Health Department of New York by the father of a child which succumbed after the administration of a prophylactic dose of diphtheria antitoxin.

To the administration of nitrous oxide is attributable the death of a patient in the office of a Bronx dentist. Unconsciousness was induced in the usual manner, but after the opening of an alveolar abscess, resuscitation was not possible.

THROUGH the benevolence of Mr. Frank A. Sayles, Pawtucket, Rhode Island, is to have a new hospital. The institution is intended as a memorial to the mother and sister of the donor, and the plans call for its completion within two years.

REPORT says that the people of Reuss contemplate the erection of a memorial to Theodor Schwann, the originator of the cell theory of organic matter. The cost of the memorial will approximate five thousand dollars, one-half of which amount is already subscribed.

DOCTOR LOUIS EDMONDS, for some time in charge of the five lepers lately assigned to the new leper colony at Penikese Island, New Bedford, Massachusetts, has been appointed to the superintendency of the colony, and will shortly leave for Penikese Island, accompanied by the afflicted quintet.

THE magnificent new medical building of the University of Vermont was formally opened on December 2, with impressive ceremonies, Doctor John B. Grant, of the State Insane Hospital, delivering the address of the occasion. The structure was erected at an approximate cost of $100,000.

FIRE recently visited the home of the *Alkaloidal Clinic* at Ravenwood, Illinois, and completely destroyed the buildings and much of the equipment, the estimated loss being $200,000. The plant will again be rebuilt and the *Clinic* continued under the name of the *American Journal of Clinical Medicine.*

THE 1909 meeting of the American Gynecological Association will be held at Danville, Kentucky, the home of McDowell, and the city in which the daring surgeon performed the first ovariotomy. The meeting will partake of the nature of a centennial celebration of the work of this intrepid physician.

SENATOR PROCTOR, of Vermont, has donated fifty thousand dollars for the erection of buildings for a state tuberculosis sanatorium, and has further signified his intention to endow the institution to the extent of one hundred thousand dollars. The plans provide for the accommodation of about thirty persons.

MEDICINE has been added to the curriculum of the University of North Dakota, work in this department having been inaugurated on September 26. The college is equipped with extensive laboratories and apparatus and the course is so arranged that graduates in arts from the University may be registered in the junior class.

THE New York Health Department has devised a novelty in the form of a hospital boat, the office of which will be to answer emergency calls in New York harbor. The craft, which is nearing completion, is divided into eight steel wards, the walls, ceilings, and floors of which are of the latest approved pattern, with rounded angles.

CONGRESSMAN BROWNLOW has introduced a bill providing for a corps of dental surgeons for the United States Navy. Three grades of operators are asked for—Assistant Dental Surgeon, Past Assistant Dental Surgeon, and Dental Surgeon. The bill provides that members of the corps shall have the same rank and pay as members of the medical corps.

GEORGE W. CATT, a wealthy civil engineer, of New York City, who died recently, bequeathed his body to the Bellevue Hospital Medical College for use in scientific research. In accordance with the bequest the body was placed in the hands of the dean of the institution, Doctor Egbert Le Fevre, and it will be utilized in the anatomical laboratory.

DOCTOR SAMUEL J. MELTZER, who, with a corps of assistants, has been investigating the value of magnesium sulphate as an anesthetic, reports that injection of the salt into the spinal cord produces excellent results, with no injurious effects to the patient. The agent is injected in quite minute quantity in the initial trial, the dose being increased as the case may require.

DOCTOR RUTHERFORD, Veterinary Inspector General of Nova Scotia, has inaugurated a new departure in the treatment of tuberculous cattle by the open-air method. The diseased animals on the Dominion experiment farms at Nappen, will be isolated from the healthy cattle and housed in suitable outdoor quarters, which will be conducted under the most approved sanitary methods.

THE Hospital Clinical Society of the University of Michigan held a very successful meeting on the evening of November 15. Several important cases were reported and will be published in the next number of this journal. The following officers were elected for the ensuing year: President, Doctor Roger S. Morris; vicepresident, Doctor William R. Lyman; secretary-treasurer, Doctor David M. Kane.

A SOCIETY for the study of diseases of the bladder and kidneys was organized in New York City on November 22. The new association will be designated the Reno-Vesical Society, and membership will be limited to fifty. The following officers will direct the affairs of the guild for the ensuing year: President, Doctor Ramon Guiteras; vicepresident, Doctor Winfield Ayers; secretary, Doctor Robert R. Hollister.

PROFESSOR BUXTON, of the medical department of Cornell University, is reported to have discovered a serum calculated to revolutionize the treatment of certain forms of rheumatism. The discovery is the result of extensive experiments in physiology and pathology, the doctor's investigations being facilitated by the joint assistance of ten coworkers. While the discovery has not yet been officially announced, it is stated that the doctor will soon detail his work before the New York Academy of Medicine.

THE Tri-State Medical Society, comprising the States of Arkansas, Mississippi and Tennessee, conducted its twenty-second annual meeting at Memphis during the last week in November. Following are the officers elected for the ensuing year: President, Allen E. Cox, Helena, Arkansas; vicepresident, Arkansas, Doctor Dickson, Paragould; vicepresident, Mississippi, Doctor E. J. Johnson, Yazoo City; vicepresident, Tennessee, Doctor F. J. Runyan, Clarksville; secretary, Doctor Richmond McKinney, Memphis; treasurer, Doctor Marcus Haase, Memphis.

STATISTICS compiled by the New York State Charities Aid Association disclose a decided decrease in the number of insane persons in the state during the past year, when the total number of patients recorded was five hundred forty-seven. The average yearly record for the past decade has been seven hundred fifty-eight. The total number of recoveries during the past year was one thousand four hundred twenty-nine, as against one thousand three hundred three for the year preceding.

THE capacity of Saint Vincent's Hospital, New York City, has been augmented by the addition of a seven-story annex at Eleventh street and Seventh avenue, the dedicatory ceremonies of which were performed on November 1, Bishop Farley presiding. The new structure is a welcome acquisition to the institution, the accommodation of which is now increased to four hundred and twenty-five beds. Over twenty-two thousand patients received treatment at the hospital during the past year.

THE preliminary announcement of the Fifteenth International Medical Congress, which will meet at Lisbon, in April, 1906, has been received. Two tours have been arranged for American physicians, Tour A, providing for a direct passage, with short stops at Seville and Gibraltar and a stay in Lisbon during the time of the Congress, and Tour B, contemplating a visit to several of the old Moorish cities of Spain and to Tangier, Morocco, the latter itinerary being of especial interest to lovers of the oriental. Doctor John H. Musser is the president of the National American Committee.

THE Rockefeller Institute of Medical Research, which is endowed by the oil magnate to the extent of $3,000,000, will be ready for occupancy during the first week of January, 1906. The foundation of the institute was conceived by Mr. Rockefeller after the death of his infant granddaughter from dysentery, his hope being that facilities for the thorough study of this and other diseases would lead to more scientific and intelligent treatment and fewer premature deaths. The institute will be equipped with excellent buildings and adequate laboratories, and will be controlled by a corps of eminent investigators.

A TESTIMONIAL dinner was tendered to Doctor Nicholas Senn at the Auditorium Hotel, Chicago, on the evening of November 11, with over seven hundred physicians in attendance. Speakers of national eminence enlivened the occasion—Mayo, Harvey, McMurtry, Witherspoon, Adams and Reed, being among those who responded to toasts. In behalf of several former pupils of Senn, Doctor L. G. Nolte, of Milwaukee, presented him with a loving cup, and Doctor J. D. Bryant, of New York City, speaking for the assembled guests, proffered a gold medallion as a testimonial of their esteem. Doctor Senn replied to the presentations with a poem entitled "Life is Short and Art is Long." The dinner was the third of a series being tendered to eminent medical men of Chicago, the inaugural one honoring Doctor Christian Fenger, while Nathan Smith Davis, founder of the American Medical Association, was the second to receive consideration.

RECENT LITERATURE.

REVIEWS.

A TEXT-BOOK OF MEDICAL PRACTICE.

THIS is a new book on a novel plan. It is of small size, less than one thousand pages of text, but clear and small type, and thin paper make the text greater than appears at first glance. It is the work of sixteen contributors, almost all Londoners, well-known in recent medical literature. The greatest novelty is furnished by the articles on anatomy, histology, and physiology that preface the various sections. This is done in order to permit the reader to obtain an exact and fresh knowledge of the basic principles. It is easy to say that the reader should be prepared by a study of larger works or of original material. As a matter of fact many graduates think they have not the time and more frequently have not the necessary works. The undergraduate has forgotten most that he knew of the topics, because he studied without realizing their importance in the practice of medicine. So, such a plan as is here adopted has great advantages, provided it is well done, and, not less important, that it is utilized. As to the former print, the work is remarkably well done. We hope the other will be as conscientiously performed.

The arrangement of the work is by systems, first, beginning with the Alimentary Canal. Metabolic and some trophic diseases, as gout, diabetes, acromegaly and rickets, are included with diseases of the Skeletal System—a practical arrangement. Infectious Diseases and Tropical Diseases come last, with a chapter on the Interrelation of Organs in Disease.

The symptoms and signs are discussed rather more fully than usual, and so enhance the value of the work for beginners. Occasionally the necessity for condensation leads to obscurity. Thus in the chapter on Appendicitis, among other dark sayings, we find the statement: "In some cases appendicitis occurs without local lesion and with putrefaction of the intestinal contents." There are a few lapses, such as the omission of England as a focus of ankylostomiasis; a few errors, such as the intimation that casts reacting like amyloid with iodine indicate amyloid disease of the kidneys. But for a first edition such faults are rare.

The treatment is comparatively full, some will think too much so for beginners, and the prescriptions given are often relics of a polypharmaceutic age now fortunately passing.

Altogether the book is one that may be heartily recommended as one of the most valuable of one-volume works on the Practice of Medicine.

G. D.

*Edited by William Bain, M. D., et cetera. With illustrations. Longmans, Green & Company, London, New York and Bombay, 1904.

THE PHYSICIAN'S VISITING LIST FOR 1906.*

THIS list contains special memorandum pages, pages for addresses of patients, nurses, vaccinations, obstetric engagements, births, deaths, cash account, et cetera. It also contains a dose table revised in accordance with the new United States Pharmacopeia. In view of the important changes made in the strength of many of the tinctures by the revising committee of the Pharmacopeia it is necessary for the physician to have ready at hand a table of doses to which he can turn on the instant. The dose table of this list is admirably adapted to this purpose. The book is strongly bound and corresponds in size to the standard of previous years. D. L. P.

*Fifty-fifth year. Leather, with pencil and pocket. Prices $1.00 to $2.25, according to number of patients provided for. P. Blakiston's Son & Company, Philadelphia.

FRACTURES AND DISLOCATIONS.*

WE have already favorably mentioned this work and now for the fourth time it comes seeking professional favor. Since the last edition the author has studied other cases and collected new plates bearing upon the carpal bones and the lower end of the humerus in the young and incorporated them in this work. The book shows evidence of revision and minor changes in other places also and is again up-to-date.

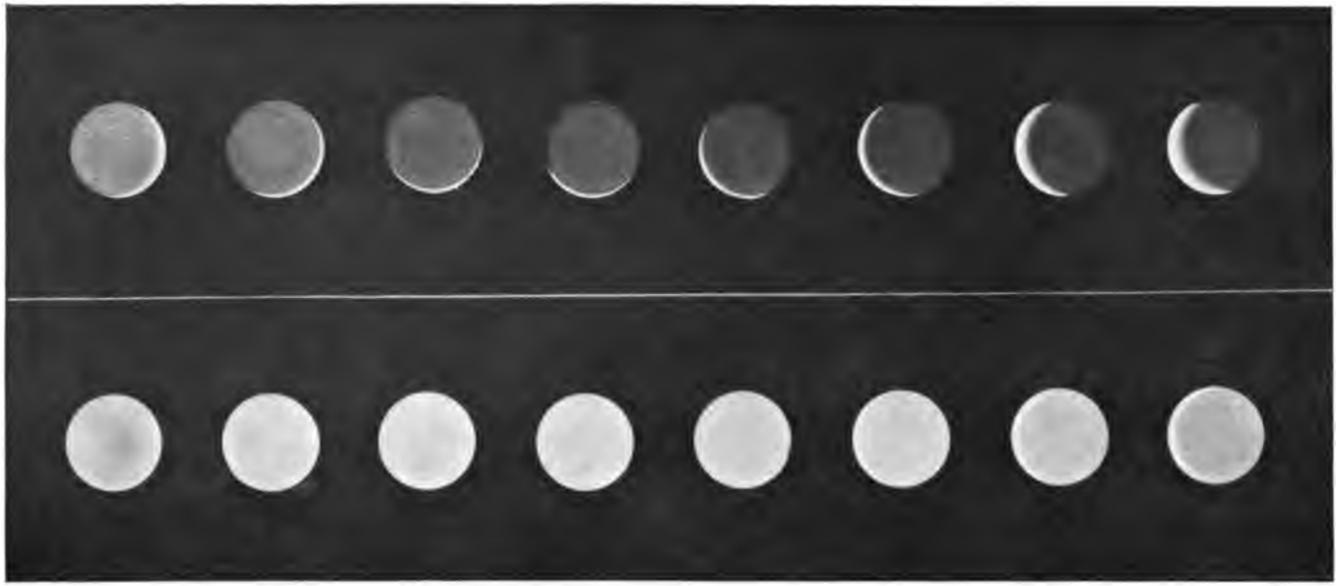
F. B. W.

*By Lewis A. Stimson, B. A., M. D., LL. D., Professor of Surgery in Cornell University Medical College, New York; Surgeon to the New York and Hudson Street Hospitals, et cetera. New (fourth) edition, thoroughly revised. Octavo, 844 pages, 331 engravings and 46 full-page plates. Cloth, $5.00, net; leather, $6.00, net; half morocco, $6.50, net. Lea Brothers & Company, publishers, Philadelphia and New York, 1905.

OPERATIVE SURGERY.*

THE author of this work followed out a happy combination of anatomy and surgery suitable and valuable to either student or practitioner. The reader is not annoyed with endless and useless details of the former or with obsolete and worthless procedures. This edition is more nearly up-to-date than any similar text we have seen. The chapter on abdominal surgery has been greatly improved and numerous changes are noticeable throughout. F. B. W.

*By John J. McGrath, M. D., Professor of Surgical Anatomy and Operative Surgery at the New York Post-Graduate Medical School; Surgeon to the Harlem Post-Graduate, and Columbus Hospitals, New York. Second edition, thoroughly revised. With 265 illustrations, including many full-page plates in colors and half-tone. 628 royal octavo pages, extra cloth, $4.50, net; half-morocco, $5.50, net. Sold only by subscription. F. A. Davis Company, Publishers, 1914-16 Cherry Street, Philadelphia, Pennsylvania.



RADIOGRAPH OF PENETROMETER.

The Physician and Surgeon

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ORIGINAL ARTICLES.

MEMOIRS.

PHYSICIAN AND PATIENT.*

BY GEORGE DOCK, A. M., M. D., D. SC., ANN ARBOR, MICHIGHN.
PROFESSOR OF MEDICINE AT THE UNIVERSITY OF MICHIGAN.

It is said of the great surgeon Abernethy, that as his eyes fell upon a new class in his lecture room, his warm heart burst forth in the words, "God help you young gentlemen; what is going to become of you?" I think of this often when I see a new lot of medical students, but never with the feeling of regret and pity that is supposed to have been in the mind of Abernethy. Far from commiserating, I feel that such people are to be congratulated, if not envied. For surely no one can take up a more interesting, a more satisfying occupation in this most interesting age. And, while the career of medicine is rarely the means of acquiring vast wealth, so that its votaries need have no fear of dying rich, it rarely fails of a competence if one has health, avoids time-consuming dissipations and mind-destroying habits, and is not cursed with the curse of unstaunched speech.

It is true that you have not yet taken the final step into medicine. You have not yet penetrated the Mystery of Practice. Until you have done that you cannot be said to be perfected in the Art. You have taken merely the preliminary steps. Notwithstanding the perseverance, the industry, the overcoming of weaknesses, that you must have had to reach the place you now occupy, you are still to be tested in the light of the answer given by John Muir to the frivolous person who asked whether the toils of mountaineering were adequately rewarded—"It depends on how much you love it!" For unless you love your chosen career no material return can raise it above the level of a trade, and

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*Address at the Commencement of the College of Medicine of the Umiversity of Southern California, Los Angeles, June 13, 1905. Reproduced by courtesy of the *Southern California Practitioner*.

a trade with many functions so repellant that they excite pity in the hearts of outsiders. According to the history of all previous medical classes, a certain proportion of you will not stand this test. But for those who drop out, it will be some comfort to know early that the study of medicine is no disadvantage in any vocation. Men afterward successful in many callings have testified how the lessons in observation, in manual training, in reasoning in the laboratory and by the sick-bed, have been of great assistance in other occupations apparently most distinct from medicine.

For those who shall go on in medicine, however, we are now most concerned. I know you are feeling happy in the belief that your days for listening to lectures are over, but the position I momentarily occupy raises admonition as a flame attracts straw, and I shall ask you to bear with me in the consideration of one part of medicine—the relation of physician to patient. You will receive many kinds of advice and many recommendations regarding your careers, and I would not minimize the importance of any of a number that are more or less regularly given out at such times. Thus you will hear of the importance of physicians taking an active part in public life, but I do not think it necessary to preach on such a topic. Physicians have always been quick to offer their services to the public or the commonwealth, and in peace and war, in pestilence and flood, have shown that they cannot only play their own part but even take up and carry on with skill and fidelity other duties requiring the highest qualities of mind and body. So I have every reason to think that you too will not fail in showing that you appreciate the responsibilities of citizenship in a republic, no matter what may be required of you.

Physicians have also always been ready to give the special knowledge they possess in regard to questions of sanitation and in the construction of laws bearing on health, and in this respect I think it may be asked whether they have not gone too far—not only for their own welfare, but for that of the causes they were trying to further. Consider the enormous labor that has been given to the investigation of water impurities, and the exact information that has been made available in regard to the prevention of typhoid fever, or the self-sacrificing efforts to lessen the spread of tuberculosis, and contrast with these efforts the almost barren results. Is it not possible that expert medical advice has been given too freely and that it has therefore met the fate of a good deal of other gratuitous advice? No doubt this is partly true, but there is another reason less depressing to our pride—the difficulty with which such information finds its way into the minds of those who should apply it. So the indifference to securing pure drinking water for most of the large cities of the country, the backward condition of our facilities for treating tuberculosis, are due to the same influences that permit a large loss of life from insufficient safeguards on railroads, in factories and elsewhere, and probably remotely to the same causes that lead to the production of so large a number of homicides.

All these topics you will have to consider and there is no need of enlarging upon them now.

I wish to speak more in detail of another idea, often advanced, to the effect that the first duty of the physician consulted by a sick man is a public one. In other words, some look upon the physician as an assistant to the authorities for the placarding of houses in which persons with contagious diseases happen to be, or as collectors of data to be used by some one of a statistical turn of mind, with only secondary interests in the health and comfort of the sick man.

Now, I do not object to either the placarding of such houses, or the collection and use of such data. I think the latter is a most important matter, and needs the aid of all good citizens. Even placarding has certain advantages, and if the meaning and results are clearly understood need cause no hardship. But have we worked out the details of these functions as well as they should be worked out in order to get results of value and in order to avoid hardships? Do we not need a more perfect understanding, a fuller agreement between the citizens and the authorities? I think this need is obvious if we remember the consequences of our sanitary laws as generally administered. We are all agreed that if a Mexican or a Chinaman is found to have leprosy the laws should be strictly enforced, but if one of our own families gets a disease quite as dangerous and sometimes as horrible, say tuberculosis or syphilis, we are by no means so thoroughly convinced of the necessity of notification, placarding and isolation. If an unknown boy in the back street gets diphtheria or smallpox it is easy to let the law take its course, but when the child of our best friend gets a similar disease is it quite the same?

Here, then, I think is a subject on which all good citizens might let their minds play, and with many advantages to every class. With a proper understanding of the dangers of the various diseases, with adequate facilities for caring for the sick, unhumane treatment and unmanly fear could be abolished.

But at present the young doctor beginning his life-work may with advantage be reminded that physicians exist because there is a desire on the part of many people at all times and of all people sometimes, to use the special knowledge the former are supposed to and should possess. Without this there would be no great medical schools and not even the primitive instruction that prevailed before medical schools came into existence. Perhaps I may be reminded of the large scientific element in medical study, of the important part of the medical school of today that is devoted to research, as an apparent contradiction to my statement, but I must adhere to it, for these are only details that have developed logically out of the study of medicine. Research and investigation have always existed as long as people began to wonder how results occurred or were obtained in disease. They have grown up most rapidly since it was made clear, not many years ago, that the study of disease is simply part of the study of nature. But all this could go on just as well without the training of physicians as did the work of Roentgen that led in ten short years to such momentous discoveries, or to go back farther, the work of Pasteur or Aristotle.

So real is the relation of physician to the individual sick man as I have put it that a contract has been recognized existing between them, and the terms of the contract have over and over again been made clear by courts of law.

According to this, the physician who undertakes the medical care of another is expected to give the best knowledge and skill that the existing state of the art of medicine permits. The service is a personal one to the patient, and while the physician is under an obligation both moral and legal not to endanger others or to permit them to be jeopardized by the sick man, his first duty is to the latter. This is so far misunderstood that one can hear reports—I hope they are not true —of doctors taking a glance at a sick man and then hastening off to report him as a contagious case to the Board of Health. Laws must be obeyed, contagion must be prevented, but surely all of these can be done without breaking down the traditions of loyalty to the patient, of devotion to the suffering, that have always been enjoined upon and rarely wanting among physicians.

From the nature of the relation it also follows that constant advance in knowledge is required of the physician, an unremitting effort to keep abreast of the rapid current of special discovery. This is not the time for discouraging statements, but it may be of some assistance if I remind you that great as is the fund of knowledge you have mastered, the graduate of next year may have a greater one. You in turn have a certain advantage over those who have gone before, but these differences become leveled as time passes and much more depends upon the kind and extent of your future acquisitions. Even your superior advantages are not yet appreciated by the world in general, and you will do well if you show the possession of wisdom as well as knowledge, by not disclosing an impatience quite natural in the face of seeming neglect. There is a Sicilian proverb which advises him who builds a house to lend it the first year to his enemy, the next year to his friend, and only then to live in it himself, and it has been suggested that the principle involved might be applied to physicians. Fortunately for the race, as well as the doctors, the proverb is neither widely known nor generally followed, but the lesson of self-improvement it contains is one of universal and perpetual value.

Having then considered some of your duties, let me now pay attention to another phase of the medical career. You will not go far before you hear dismal accounts of the practice of medicine as a breadwinning occupation. Perhaps you have already heard of the passing of the family physician, of the decline of the general practitioner, of the specialization of medicine, or rather its differentiation into a large number of minute and unrelated functions. There is, and always has been a tendency to specialization in medicine as in other arts, but a refinement such as is sometimes mentioned is not essential and most of all is not brought about by the patient, who has not, I think, at least willingly or knowingly caused the idea of the passing of the general practitioner to obtain currency. There is no more reason to think that the function of the general practitioner has been abolished by new methods of work than it would be to think that surgical instruments are no longer needed because saddlebags have gone out. The field still exists, but it is a different field in that it requires more intensive and more modern cultivation. It requires an adaptation of advances that make it more difficult, but also more interesting than before, just as all the details of agriculture are more difficult but also more interesting than those of the Indian, and the young physician, just out of school, has only himself to blame if he does not make for himself in this large domain, a position as honorable, as useful and as well remunerated as it ever was before. But in order to do this he must be ready to furnish more than was expected before the days of the microscope and the test-tube, of John Hunter, Laennec, Virchow, Pasteur, Koch, and Laveran. He need not be a skin specialist, but he must know whether the baby has eczema or smallpox, nor an ear specialist, but must know how to recognize the acute and common diseases of the ear, just as his father had to before him. But he should also be blood specialist enough to discover a leucocytosis or a pernicious anemia, and other things besides. But just here is one of the most interesting paradoxes of modern medical education. A large number of more or less specialized topics are brought to the attention of the student, but from them two men of equal brain power and application get diametrically opposite results. One becomes fascinated by the attractions of a certain course and begins as a specialist in that line, often with ultimate success, but sometimes with failure. The other looks upon the branch as beyond his abilities or facilities, neglects it altogether or in case of unusual need sends for a specialist. Both attitudes are wrong. Each has caused the failure or deterioration of promising men. The truth is that the graduate should look upon his education as only begun, the single thing he has wholly mastered being the knowledge of how to work, that is, of methods. He should feel that he knows how to discern disease, that he is prepared for the numerous common emergencies and can undertake with confidence the care of the sick or injured, but that the best results for the patient, the greatest facility on his own part can be attained only by constant practice, constant study and constant self-criticism.

The man who now enters general practice from such a school as yours, and who utilizes thoroughly the methods he has been taught lays broad and deep the foundation of knowledge and reputation. If his tastes so incline he may become a genuine specialist, making use of the hands, eyes and brains of others in carrying out many details, but he can hardly use these aids with satisfactory results unless he has had the routine and the practice himself.

There is of course another class of specialists—men who from the beginning devote themeselves to a limited range of work with the view of attaining the utmost proficiency, and if the plan is a broad one and the training sound, the results will be good, but this is a matter that does not concern us now, since we are not interested in the study or practice of specialties but of the general practitioner. I have not outlined an imaginary picture. I have seen him, in the country as well as in the town. His patients rely upon him not because of a blind confidence or an inability to change, but because of a tried conviction of his care, his foresight and knowledge. So long as he adheres to the methods that made him respected he does well. One of his most dangerous sources of weakness arises from unavoidably frequent association with his patients, often tempting to a wrong conclusion as the result of hasty reasoning. It may seem unlikely that the man we see daily and who looks so robust has a gall-stone, or an incipient tuberculosis, or that the chronic complaints of another are due to gastric ulcer, but unless we apply to our friends when they consult us the same objective methods of examination, the same logical interpretation of findings that we apply to strangers, the unexpected may happen, with disappointment if not worse.

Permit us to consider another question that often disturbs the equanimity of physicians, old as well as young—the existence and extent of medical quackery, with its exploitation of the health and money of the population. This is a problem well worth the careful study of thoughtful well-wishers of the race. It happens that physicians have a better chance to see its ravages than have others, and yet we are obviously not in the best position always to make an impartial study. In regard to the extent of quackery, I think we allow ourselves to be influenced by certain things that make judgment difficult. It is natural, when we think of the oceans of nauseous and often poisonous stuff called patent medicines, but neither patented nor medicinal, annually swallowed in the pursuit of health or strength or beauty, or when we see the extent to which our daily paper has to be expanded in order to proclaim the virtues of the wares and to set forth the features of those so miraculously rid of so many and varied diseases, to conclude that matters never could have been worse. When we see the growth of a sect like that of the Christian scientists—often supposed to rival the world-conquering career of the followers of Mahomet in vigor though so different in method; when we consider the wide diffusion of osteopathy or the influence of Dowieism, we are tempted to think Haslam was not far wrong when he said that asylums are built in order to make those on the outside believe that they are not insane.

But I think we are inclined to let ourselves be overcome by the nearness of the vision, and the blatancy of the means of publication. The phenomena are only modern examples of errors that have existed as long as civilization, and while there are doubtless waves or cycles of increase it is probable that they are not worse now on the whole than at many times in the past. (Such a wave has for some years been rising over Germany, where the outcome must be watched with great interest.) Modern methods of advertising, which consist in making people buy what they do not want; modern methods of diffusing information; and modern ingenuity which suggests an imitation of every invention of value,—all assist in magnifying the proportions of the object. Another fact that seems reassuring is that other forms of quackery, financial, philanthropic and religious, are not as extensive or destructive now as they have been in the past. Great as certain financial delusions have been in recent times, I think it clear that bearing in mind the difference in means of advertising, the Mississippi Bubble and the Tulip mania have not been approached. Among medical delusions neither Eddyism, Dowieism or osteopathy have been known long enough to warrant predictions as to their duration, but I think we may doubt that they are relatively as flourishing as was homeopathy in its palmy days. As for indiscriminate dosing, a glance through the newspapers or the almanacs of the last century will lead one to conclude that it also is not as bad as it has been. On the whole, I am of the opinion that people in general are more enlightened on medical affairs, and more willing to follow real knowledge than they have ever been before.

Those who imagine that quackery has reached a greater extent than ever before may take a melancholy satisfaction in reading the extent of the abuse in the sixteenth century, so graphically described by John Hall in his "Historiall Expostulation: Against the beastlye Abusers, both of Chyrurgerie and Physyke, in oure tyme. 1565." Those who fear the combination of religious and medical quackery so conspicuous at present can take heart, I think, from a brief recital of the life of one of the most picturesque and most successful of all the motley array. This was Alexander the False Prophet, indirectly the pupil of the more remarkable but less accurately known Apollonius of Tyana. We are fortunate in knowing about Alexander through the account of "the cleverest man who was alive on this planet in the second century"—Lucian, "first of the moderns;" who interviewed the prophet in his temple and wrote up his life and doings with all the interest of a scientist in a rare and interesting specimen. As Froude says (A Cagliostro of the Second Century. The XIX Century, September, 1879): "Aesculapius, the god of healing and therefore the most practically useful, had become the most popular of the heathen divinities. He alone of them was supposed to remain beneficently active, and even to appear at times in visible form in sick-rooms and by sick-beds." Alexander performed his exploits in that same highly civilized Asia Minor where Saint Paul not long before found need of his ripest culture and keenest logic. In the town of Abonotichus he buried some brass plates bearing an inscription stating that Apollo and Aesculapius were about to visit the land and that Aesculapius would appear in bodily form. Having caused the plates to be conveniently discovered and interpreted, it was easy to do the rest, as Joseph Smith demonstrated so long afterwards. A temple was joyfully prepared for the god. A goose egg, containing a young snake, placed in the temple, was soon hatched out and the small snake quickly succeeded by a monstrous full grown one, made more portentous by a linen mask painted to imitate a human countenance. This was quite enough to prove to willing minds that Aesculapius had indeed become manifest in the very emblem of wisdom. First from the immediate locality, then from all parts of Asia Minor, from every corner of the Roman world, even from the Imperial City itself, came crowds of people, asking for health, for fortune and for favor. The opposition of heathen philosophers and of the Christian believers only added to the zeal of the fanatics. The sick were healed; the dead raised. As a very modern touch Lucian tells us that the most powerful and noble were the most enthusiastic followers, and heading these was Rutilianus, friend of the emperor and of great influence among the highest people in Rome. Failures to cure did not retard the movement, any more than they do now under a Schlatter or a Dowie. The exposure of a mistaken prophecy that had led to the deaths of a number of innocent slaves, given to the wild beasts, only caused the stoning of the man who made known the mistake. An attempt upon the life of the influential Lucian himself, who tricked the prophet, was not only unpunished, but the influence of the impostor was greater than ever. And so the great charlatan kept up his spells to the end of his life, and even his death at about seventy years instead of the one hundred and fifty he predicted did not at once break the faith of his victims.

It is easier to discuss and even to explain the causes of such phenomena than to exterminate them. They lie at the very roots of human nature. Bacon, with his usual keenness, expressed the matter poetically when he recalled the myth according to which Aesculapius and Circe were "brother and sister, both children of the sun." "For in all times," as he adds, "in the opinion of the multitude, witches and old women and impostors have had a competition with physicians. And what followeth? Even this, that the physicians say to themselves, as Solomon upon a higher occasion: 'If it befall to me as befalleth to the fools, why should I labor to be more wise?' " The resort to quackery is due to the same feelings that take the sick man to the physician—hope, fear and faith, the sources of so many other human actions. The sufferer often does not know that there are differences in knowledge and in aims and motives, and it is of course chiefly in aims and motives that quackery differs from honesty.

Not only that,—there are in many forms of quackery elements that remind us of errors of commission and omission of our own, and that might well be utilized for our greater improvement. Consider the quantities of products of polypharmacy that make the fortunes of a Hartman, a Warner, or a Pierce. These are only survivals of a form of treatment long made respectable by physicians. Are we in fact free from it now, and do we never give it with as little effort to adapt remedy to disease as does the quack? The success of the osteopath is closely related, I think, to the failure of the profession to utilize massage as fully as it should be used. Of course a great deal of the vogue of this species of charlatanry depends upon the fantastic diagnoses, the names of which sound so plausible and so fearful, but a great deal of it came from the reiteration of the use of massage, asserted to be a refined or ultrascientific massage, perhaps, but in fact only a set of manipulations long reputed to be useful, carried out by physicians in many other countries, but almost neglected in the land of osteopathy.

The so-called psychologic or metaphysical methods of healing depend upon measures used by physicians as far back as medical history goes, in the same classes of cases that now claim to represent "New Thought," and these methods also are too frequently neglected in this anatomic, physical and chemical age.

But even if we are convinced that the extent of quackery is overrated now, and that it is not as great as at former periods, it is still certain that it is a serious source of evil. If all the methods were harmless one could not object so seriously, but we all know that liquor laws are a mockery as long as alcohol can be bought freely in the form of patent medicines. Still more serious is it that narcotics can be bought in the same way, and that even the least harmful preparations foster the delusion that sins against the body need not be expiated, but may be washed away by decoctions with weird but euphonious names. Then too, there are the numerous cases of sacrifice of the innocent. One may think it useless to try to keep the fool from his folly, but no one can hear without indignation of the neglect of helpless children, suffering unnecessarily and even dying under the crazy logic of one "healer" or the awkward manipulations of another. Such events, and they are not rare, should force us to devise a remedy for such abuses, but the remedy is by no means easy of solution.

A favorite suggestion at the present day is organization of the medical profession, with the view, among others, of making a campaign against quackery. Now, we live under the sign of organization, and organization is good in itself. For mutual benefit; for carrying out desired ends inside the profession; for elevating the standard of medical education and improving the administration of medical institutions, organization would be of immense value. But from a campaign against quackery by medical organization alone, I fear that more harm than good will come. Opposition does more to nourish all such manifestations than anything else. This depends upon psychologic laws that apply perhaps more strongly to the Anglo-Saxon temper than to others, involving sympathy for the so-called weaker side. Moreover it would be impossible to convince an impartial but skeptical world that no class-antagonism, no self-seeking, is involved in such a contest. Most of all the subject is too long-lived, too extensive and too protean, the vested interests too great, to be successfully met by an organization that must be limited in number and in capital. After convicting all known transgressors there would soon be others, just as active.

If flagrant dishonesty can be shown, if laws for the regulation of the sale of alcohol or other poisons are infringed, there are legal methods at hand that do not or should not require organized or individual efforts of physicians. There seems to be no more reason why physicians individually or as an organization should prosecute quacks than that miners should ferret out and indict gold brick swindlers, or bankers do the same for counterfeiters. In both the latter cases and that of the quack expert knowledge may be utilized with advantage, of course, but this is a different matter.

One thing physicians can do in order to lessen the extent of quackery is to carry out their work in such a way that the contrast between themselves and pretenders will be most striking, so that those in pain or disability will go to them with a confidence as strong as faith in the unknown or the supernatural. In this advance and with the diffusion of more accurate knowledge of health and disease among all classes the physicians of the future should take an active part. If I have been able to direct your thoughts along the line indicated, and have encouraged you to devote some of your energy and enthusiasm to the problem, I shall have the greatest satisfaction that can come to a teacher.

PRINCIPLES OF PHOTOGRAPHY FOR ROENTGEN RAY WORKERS.

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THE correct technique employed in producing good negatives by the Roentgen ray process differs sufficiently from that used in the production of good landscape or portrait negatives to be worthy of especial consideration.

To begin with, the radiographer works with transmitted radiant energy, while the photographer works with reflected light. The exposure of the *x*-ray plate is therefore comparable to the method of exposure in the microphotography, and in fact, the production of good negatives by the *x*-ray process depends in a measure upon principals similar to those employed in microphotography.

Landscape and portrait photographers endeavor to produce in their negatives soft and harmonious gradations of shades and shadows. Dead-sharpness, microscopic definition, and strong contrasts are to be avoided. The microphotographer and radiographer aim to get just these elements in their negatives.

Though the developmental technique is comparatively simple, the large number of poor negatives produced, shows that it is not any too well understood. The Roentgen ray operator is therefore urged to develop his own plates, or, if he elects to do otherwise, at least to do so until he has become familiar with the process. As the best way to secure such mastery, he is urged to adopt one brand of plates, pure chemicals, one developing formula, and Roentgen tubes of approximately the same degree of vacuum. If possible he should keep all the factors, electrical and photographic, as nearly constant as possible, varying only the duration of exposure, until he is a thorough master of the effect of such time variations. He may then study the effect of using tubes of different vacuum and penetration, excited by different current strengths.

The fundamental principle of photography is dependent upon the action of light on certain salts, particularly bromide of silver. The plate or film used is covered by a gelatino-bromide of silver emulsion. The action of light is to liberate some portion of the halogen, forming a silver subsalt, which, according to Baker's researches has the formula Ag_4OBr. This salt is easily reducible to finely divided silver by the action of certain reducing agents termed "developers." This reduction takes place in direct proportion to the intensity of the light, particularly actinic light. We may include with actinic light ultra-violet light, Roentgen rays, radium rays, et cetera.

The unreduced and unexposed silver bromide must be dissolved out of the film, after development, which process is termed "fixing" the negative. The resultant negative will be quite dark in those portions receiving the most light, and nearly transparent where it receives the least.

The experienced photographer knows that a plate receiving a relatively short exposure will give a negative having harsh and violent contrasts, especially if it be developed long enough to give good detail in the shadows. If the plate be much underexposed, there will be very little or no detail in the shadows and the middle tones will be sharp and harsh.

If the photographer is aiming at softness, detail, gradation, and trying to avoid violent contrasts, he will call that exposure correct which will give him such a negative. Such a negative would, however, be overexposed, to the photographer desiring sharp and emphatic contrasts. A still longer exposure will yield a very thin, flat, quick-developing negative, devoid of sharp contrasts. Prolonged development will increase the density of such a negative, but it will increase the contrast but little, if any. These points with reference to exposure must be kept in mind by the radiographer.

(1) Short exposures give strong contrasts, harshness, great density in the parts receiving the most light; there may also be lack of detail in the deep shadows.

(2) Correct exposure gives the photographer or radiographer contrast, good gradation, definition—in other words that exposure is correct which yields the desired negative and an exposure for a contrasty negative differs considerably in duration from one where softness is desired.

(3) Overexposure gives lack of contrast, lack of density, flatness, thinness, or nearly uniform darkness or density, according to the duration of development.

Both overexposure and underexposure may be compensated for in a measure by modified development, provided the operator is aware of the error in exposure before he begins development.

The lighting plays an important part. Harsh, contrasty lighting may produce exactly the same kind of a negative as underexposure. Uniform or "flat" lighting, may, on the other hand, give one a negative similar to an overexposed plate. The lighting produced by the x-rays is usually devoid of brilliant contrasts, especially from tubes which give the best results fluoroscopically. Medium tubes and hard tubes, so-called, or tubes of relatively high resistance, give on the fluoroescent screen what would be termed a flat lighting; a lighting lacking in strong contrasts, and in marked gradations, and hence to be corrected, if the radiographer desires *contrast, definition,* and *density,* by *avoiding* overexposure and by development in a clear-working, contrast-producing developer.

As the photographer corrects the lighting of the studio for the work at hand, so the radiographer may govern his, within certain limits, bearing in mind, however, that this will not do all. Increasing the distance of anode from plate or screen may improve the contrasts, and too much series spark gap may detract from the contrast. The anode, for medium or hard tubes, should be about twenty to twenty-four inches from the plate.

So far as contrasts are concerned, the soft tube may be placed nearer the body than the hard one. The duration of exposure must be correct, and the handling of the plate in the dark room must be correct, to make even a correct lighting yield an ideal negative.

The operator must be familiar with his apparatus; he must be able especially to interpret the working of his tubes. He ought therefore to possess some form of penetrometer, for measuring the penetration of the rays. He should also be able to judge of their volume and should bear in mind that if his tube is properly transforming electrical energy into radiant energy, that the volume of rays, or intensity of x-light, will be proportional to the current going through the tube. If he is using a static machine to excite his tube, while he may produce good negatives, the exposure must be much longer than when using a coil. For quick work a coil giving a heavy output is essential.

A penetrometer answering the purpose very well may be made by cutting cylinders from an aluminum rod, about one centimeter in diameter, and ranging in thickness from one to sixteen millimeters. These cylinders are to be set in circular openings cut in lead, the first eight in a strip of lead one-half millimeter thick, and the second eight, from nine to sixteen millimeters in thickness, set in openings in lead one millimeter thick. This device may be fastened to a thin board, or heavy pasteboard by means of Le Page's glue. It is well also to fasten a strip of brass one-half millimeter thick alongside of the lead of this thickness and a strip of brass one millimeter thick beside the lead of the same thickness. This instrument may be temporarily fastened in front of a small hand fluoroscope. If the hand holding the fluoroscope is protected from the rays by a shield, so much the better. The operator can, with this instrument "read" his tubes without fluoroscoping his own hand.

The Benoist and the Walter penetrometers are very useful in this connection, but the simple homemade penetrometer, costing one-tenth as much will answer every purpose.

Tubes whose rays penetrate from eight to twelve millimeters of aluminum may be termed "soft" tubes or tubes of low resistance. Negatives made from an exposure to the rays of such a tube will be brilliant and contrasty, if properly timed and properly developed. Plates so exposed will bear a larger percentage of overexposure than from the rays of a harder tube.

Tubes, whose rays penetrate from ten to sixteen millimeters of aluminum, the last few cylinders but slightly, may be termed medium tubes, and these rays should also penetrate the one-half millimeter brass strip to some extent. An underexcited medium tube or even a hard tube, so excited may give the same reading, and require nearly the same duration of exposure, as the properly excited soft tube. The soft tube passes more current, and hence produces a larger volume of rays than the harder tube. Medium and hard tubes are liable to be underexcited if actuated by the current from a static machine or small coil with mechanical interrupter.

Tubes whose rays penetrate freely the sixteen millimeters of aluminum, both brass strips, and the one-half millimeter of lead, are hard tubes, or else medium tubes excited by a large current. The operator will soon learn to judge by the brilliance of fluorescence under these aluminum windows, and under the one-half millimeter brass strip of the volume of rays emitted from this tube. When reading a tube the radiographer will hold his fluoroscopic screen and penetrometer the same distance from the anode that he is to place his plate.

Great care is necessary in using hard or vigorously excited medium tubes to secure proper exposure. In this case the plate will not bear very much over exposure and still yield a contrasty negative.

For quick work, great range of densities and detail in the shadows, I make use of a tube which will penetrate all sixteen windows, give brilliant fluorescence under at least the first row of eight, and also under the one-half millimeter of brass. The accompanying radiograph shows the penetrometer exposed to such a tube twenty seconds at a distance of twenty inches from the anode, a mercury jet interrupter and an eighteen-inch spark-gap induction coil being used. The tube backed up about eight inches parallel spark gap. The electrolytic break is more satisfactory for rapid work, as the output from the secondary is very much greater, and the number of interruptions greater. The tube receives more electrical energy, and good chest skiagraphs can be made in from one to six seconds, with such a tube, whose reading is exhibited, backing up not more than eight inches parallel spark gap. Any part of the body can be radiographed in fifteen seconds. Any good tube, with heavy anode, and preferably at least six inches in diameter, will do this work. The tube must, of course, be able to maintain its vacuum during the exposure, and work continuously without "flashing."

For radiographing thin structures or getting detail in hand, foot, wrist or elbow, I sometimes use a softer or less penetrating tube with the mercury jet interrupter, and spark gaps in series in all cases sufficient to cut out inverse discharges from the coil, or to make the tube work clearly without the appearance of irregular fluorescent rings in the inactive hemisphere. The exposure is sometimes as long as forty-five seconds with the so-called soft tube. Fluoroscopic examination of the parts so radiographed show the bones quite dark, yet penetrated slightly. In all his work, the beginner in radiography will succeed better, if, under proper protection to himself, he fluoroscopes the part to be radiographed, and selects that tube which, while the rays penetrate freely, gives the greatest contrast in lighting.

It is poor economy and worse practice to try to make one tube do everything. Keep your new tubes on hand for light work. As they become seasoned by use, they will bear a heavy current, and may be used for quick work without their falling in vacuum and penetrating power during the exposure.

Every radiographer should have a good dark room. It should be equipped with running water, be well ventilated, and, if possible, should be equipped with double doors, with spaces between, allowing one to pass out, closing the first door behind him, before opening the second. This permits ingress or egress without admitting light. The dark room should have plenty of shelving, everything should be kept clean and in order. It is important to have different trays for developing and fixing. Large granite pans will answer very well for the fixing bath. Here cleanliness is absolutely essential to success. The dullest ruby light that one can get along with is none too safe.

On the choice of a developer depends a great deal of the radiographer's success. I believe he will do well to avoid the rapid working developers, which, while they give detail and softness, do not give that brilliancy, contrast, and density desired in an *x*-ray negative. The developers which do give these qualities to the negative are hydroquinone, adurol, glycin, and pyrol. The first three may, if desired, be compounded to advantage with some of the rapid soft detail-giving developers, such as edinol, metol or ortol.

Developers are easily adjusted in composition to meet the requirements of different conditions and the worker should understand the composition of his developer in order that he may use it intelligently.

The necessary constituents of a developer are usually five, as follows:

First, the reducer. The developing agent itself, hydroquinone, adurol, glycin, edinol, or ortol is termed a reducer because it is really a reducing agent. Its function is to combine with the bromine from the bromide of silver which has been acted upon by light, or Roentgen rays, and set free finely divided silver in the film. It is the reducer which brings out the image on the plate, invisible before development.

Second, the accelerator. The addition of an alkali hastens or accellerates the action of the reducer by increasing its affinity for bromine, or oxygen. After the reducer has been combined with the accelerator, in solution, it rapidly oxidizes on exposure to air and hence should not be exposed to air except during development. The rapidity of development is governed by the amount of alkali. Too much alkali will cause fog, or haziness, especially if no restrainer be used, and too little will make the developer work too slowly, and with lack of density. The carbonates of sodium and potassium are usually chosen as accelerators.

Third, the preservative. This is a chemical which protects the developer from rapid oxidation on exposure to air, and governs the color of the deposit in the film. Oxidized developers stain the film a yellowish brown. Sodium sulphite is usually used. It is also a reducing agent, and is sometimes called the "stain preservative," as the quantity used governs the color of the silver and gelatine film. Too little leaves the negative stained brownish-yellow and too much gives a bluish, or "cold" tone to the negative. A little more can be used with profit in x-ray developers, than in portrait or landscape negatives, where "warm" or brownish-black, negatives yield stronger prints. Metabisulphite of potassium is also used. Acetone sulphite is also an excellent preservative, and also acts as a restrainer imparting clearness and brilliancy to the negatives, besides saving some detail in the dense parts of the negative, by preventing these parts from "blocking up."

Fourth, the restrainer. This is a chemical compound which causes the developer to work with clearness, crispness and contrast. It works to prevent fog, and lateral spreading of the reduction of the silver by the developer. In the reduction without bromide some fog or veiling of the image is almost inevitable, even in short exposure. In order to explain the action of bromide it is necessary to reconsider for a moment, the action of the developer. At the time of reduction of a particle of silver halide, some portion of silver metal is deposited on a neighboring particle of silver bromide, with which it reacts to form Ag_2OBr. This particle, now, may be reduced by the developer, exactly the same as if it had been exposed to light. This process, while not capable of indefinite repetition, plays an important part both in the production of fog and the production of density. An experiment by Sir William Abney, shows a result easily explainable by this theory. He exposed an ordinary dry plate, and before development he coated it with a second film superposed on the first. This plate, with its double film, was then developed, fixed, and washed, after which the two films were carefully separated, and, notwithstanding that the second film had never been exposed to light, it contained as perfect an image as the first. It would not, however, be safe to infer from this that an infinitely small exposure could produce an infinitely large deposit of silver. The process, of course, has its limits. Now if the uppermost particle of silver by its reduction is able to render reducible a neighboring particle of silver salt, then there will be lateral growth as well as vertical growth of the image. This lateral growth we may term "fog" and the use of an alkaline bromide may minimize or altogether prevent it.

The restraining action of the bromide of potassium is explained as follows: When the reduction of the silver subsalt affected by light commences, the potassium bromide combines with the unaltered superficial particles of silver bromide, forming a double salt of potassium, and silver, which is less reducible than the silver bromide itself. By degrees the reducing action of the developer penetrates deeper into the film, while the action of the bromide of potassium is largely confined to the superficial layers, hence the vertical reduction of the silver bromide is handed on from particle to particle, and the control of the progress of reduction extending only into the depth of the film, on the securing of an image free from fog and of ample density is assured.

From this it might appear that the addition of bromide of potassium would be valuable even in cases of underexposure, and such is indeed the case. In landscape and portrait photography the slight veiling of the image due to lack of bromide in the developer may heighten the pictorial effect.

Fifth, the solvent. This last constituent, water, is a very important one. Much trouble may arise from the use of water containing either organic compounds or iron from the water pipes. If distilled water is obtainable, it should be used; if not, water from melted ice, or boiled water may be used, either of which should be filtered if not perfectly clear.

The developer should be compounded only of the purest chemicals. It should be stored in bottles holding not more than five hundred cubic centimeters, or even smaller, kept well filled and closely stoppered to prevent oxidation. It is preferable to make up the developing solution and the alkaline solution separately and combine them just before use.

After a vast deal of experimenting I have adopted the following developer for all my work, on account of its giving uniformly excellent results:

SOLUTION A

32	ounces	Water	1,000	c. c.
6	"	Sodium Sulphite (anhydrous)	192	grams
1	"	Hydroquinone (or adurol)	32	"
5	drams	Edinol	20	"
6	"	Potassium Bromide	24	"

SOLUTION B

32	ounces	Water	1,000	c. c.
8	"	Potassium Carbonate (dried)	256	grams

Use Solution A, one part,
Use Solution B, one part,
Water, two parts,
At a temperature between 65° and 68° Fahrenheit if possible.

The used developer may be preserved in well-stopered bottles, and used again if it remains clear. The addition of old developer to the new, in case of uncertain exposure, is sometimes of advantage. The development of the plate may be started in the old developer, transferring to the new if the image comes up very slowly, say appearing only after being in the developing solution for a minute and a half.

The fixing bath is a very important compound. I have not found anything superior to the chrome-alum-acid fixing bath. It keeps well, and may be used repeatedly, but as soon as it becomes slow in action, it should be discarded, the containing vessels rinsed thoroughly, and a new bath made up. The formula is as follows:

A

Hyposulphite of soda solution, 80 hydrometer test..	5,000 c. c.
Sulphite of soda solution, 60 hydrometer test......	800 c. c.

The hyposolution may be made up in a crock, the sulphite solution added, and while stirring rapidly add the following:

B

Chrome-alum solution, test 40..................	800 c. c.
Sulphuric acid, c. p............................	40 c. c.

Plates should be left in this bath double the time necessary for the white silver bromide of the film to disappear. If they are thoroughly fixed, thirty minutes washing in running water will suffice.

The exposed plate should be removed to the dark room and developed as soon as possible after exposure. It is well to develop the plate before the patient is allowed to leave the laboratory, as any poor results can then be rectified by additional exposures without the necessity of calling the patient back. The developer should be prepared in a graduate or glass pitcher and the room darkened save for the ruby light. Remove the envelopes from the plate and place it, film up, in a freshly washed tray. Tilt the tray slightly and flow the developer over the plate with one sweep, to avoid adherent air bells, and at once begin rocking the tray slowly and evenly. Have a watch near enough the ruby light so you can keep track of the time, or better still, use a metronome beating seconds. Keep the tray well removed from the ruby light, *especially* during the first part of the development. Note carefully the time of appearance of the image, that is, the clear outline of the object radiographed. The image ought to appear in from forty to eighty seconds—not so soon as the appearance of the image in a portrait or landscape negative. If the image appears before forty seconds, using the formula given, there is great danger of fogging. The most of my plates are so exposed that the image appears in one minute, and development is completed in from six to eight minutes. Whatever the time of the appearance of the image, development will be completed in from six to eight times the time of appearance of the image.

The development of a plate a definite multiple of the time of appearance of the image, is termed *factoral development* and is based on the principle that for a given developing solution, the reduction of the silver salt proceeds at a definite rate. Different developers have different factors, but the factor for any one developer is a constant for the same density, if the exposure be nearly enough correct to give even a fair negative. The factoral method of development was perfected by Alfred Watkins, and is advocated by many photographers. Its use enables even the beginner to produce uniformly developed negatives. Just what factor to use, the operator will decide for himself, in accordance with the density he desires. Having determined that, he is ready to duplicate his results. Factoral development has the added advantage that the ruby light may be dispensed with as soon as the time of appearance of the image is determined. Many plates are fogged by holding them up to the ruby light for examination during development. It is well to avoid this altogether, for better and more uniform negatives can be secured by the factor method.

If the tissues begin to develop out in less time than forty seconds, with the formula mentioned, the plate should be removed to a tray of once-used-developer or running water and more bromide solution, say three drops of the ten-per-cent solution, added to each ounce of developer. Then return the plate to the developer and complete the development. Care is necessary, however, in using old developer, as that which has become much discolored may stain the film.

The plate should not be subjected to more than one minute's washing between development and fixing, and as soon as it has been fixed and washed for the required time, it should be wiped off on the film side with a wisp of wet absorbent cotton and flushed for a minute under the tap, to remove any sediment from the wash water. Negatives should dry in one hour or less, preferably in a light draft of dust-free air. Too slow drying adds density to the negative, and robs it of some of its brilliancy.

In conclusion, the radiographer should keep in mind, first, that the shortest possible exposure consistent with detail in the shadows, will give the greatest contrast between tissues of different densities. The greater the penetration, the harder the tube, the higher its vacuum, or the greater its resistance, and the greater the current strength through such a tube, the greater is the liability of overexposure. Furthermore, the tissues themselves when actively rayed undoubtedly become secondary centres for radiant energy which will fog the plate in a slight overexposure. Second, the softest tube, or tube of lowest resistance, whose rays will freely penetrate the tissues of the part to be radiographed, and which will maintain its vacuum during the exposure, is the tube whose rays will produce a negative presenting the greatest contrasts between tissues differing but little in density. Third, a clear-working, contrast-producing, detail-giving developer is essential, especially where high voltage and large ampèrage have been used with a medium or hard tube, as would be the case where the patient holds the breath during the exposure of chest or abdomen.

The radiographer should learn to govern not only these different factors for the work at hand, but also to modify the duration of exposure and development to adapt them to the quality and quantity of Roentgen rays produced by his tubes. A great deal of experience is required to produce the expert, but the novice may produce acceptable work in a few months' time, by close application and careful attention to details.

Electrotherapeutic Laboratory,
University of Michigan.

TRANSACTIONS.

CLINICAL SOCIETY OF THE UNIVERSITY OF MICHIGAN.

STATED MEETING, NOVEMBER 15, 1905.

The President, ROGER S. MORRIS, M. D., in the Chair.
Reported by DAVID M. KANE, M. D., Secretary.

REPORTS OF CASES.

PYOPNEUMOTHORAX.

Doctor Roger S. Morris: I wish to present a case of pyopneumothorax in a male, aged twenty-three, single, who was admitted to Doctor Dock's service November 11, 1905, complaining of cough with expectoration, weakness, dyspnea, and loss of weight.

The patient's family history is negative. At the age of two years the patient developed left-sided hip-joint disease, which was in all probability tuberculous. At different times pus has been evacuated and sinuses have formed. Complete ankylosis has resulted. This is the only disease of which the patient knows during childhood. One year ago last winter he had "measles;" good recovery. He has been able to work at his trade of harness-maker until last April, when the present trouble began.

At that time the patient caught a severe cold; two weeks later he took to his bed, remaining there five weeks. The patient was told he had fever constantly at this time, the temperature never being less than 100°. He has had a cough and has raised a white "froth." For seven weeks there were pains in the right side aggravated by coughing. Six weeks after the onset the right side was tapped and three pints of fluid "as clear as water" were drawn off. There has never been any blood in the sputum. During the last two months and possibly a little longer the patient has noted a sound when he turns over quickly in bed like that produced by "filling a big pan partly full of water and then shaking it." No history of sudden dyspnea or pain. His appetite is good; bowels regular.

Examination shows the patient to be considerably emaciated. When reclining, he lies on the right side with the knees flexed on the abdomen. The left hip is fixed. The skin is sallow, dry, and presents scars from old sinuses and a fistulous opening from which urine escapes in small quantities. On micturition almost as much urine is voided from the fistula as from the urinary meatus proper. The mucous membranes are rather pale.

The thorax is somewhat narrow, of good depth and length. The epigastric angle is about 70°. The intercostal spaces are retracted on both sides of the chest on inspiration, but more so on the left. Expansion is almost nil on both sides. Vocal fremitus is strong on the left, absent on the right. Percussion on the right gives hyperresonance from the apex to the margin of the ribs with the patient in the recumbent posture, but in the posterior axillary line dulness is met with. When the patient sits up there is absolute dulness below the fifth rib in the right nipple line; this extends horizontally around to the middle line behind. Rod-pleximeter percussion brings out marked metallic resonance over the hyperresonant area; coin sound present. Auscultation reveals an absence of vesicular breathing; over the apex and below the fifth rib with the patient on his back there is a distant metallic reverberation. Whispered pectoriloquy over the same places. Hippocratic succussion is well marked. The left upper lobe shows signs of infiltration and probable excavation. Increased vesicular and fair resonance are obtained in the left back.

There is considerable dislocation of the heart. The apex is in the fourth intercostal space just inside the nipple line. Absolute dulness is normal in area, but is moved toward the left, so that the right border is in the left parasternal line. The second pulmonic (?) sound is accentuated, corresponding to a diastolic shock which is felt a little outside the left nipple line in the third intercostal space. Pulse small, regular; pressure (fifteen centimeters) one hundred twenty-four millimeters mercury. Liver dulness extends from the costal margin to the level of the navel in the right mammillary line. Palpation of the abdomen is painful.

On November 13 fluoroscopic examination showed the left side rather dark, but on the right there was a very clear area above the fourth interspace with a heavy shadow below this. Waves were seen passing across the top of the dark part synchronous with the pulse. The diaphragm moved about two inches up and down on the left; no motion on the right.

Yesterday, November 14, in the clinic Doctor Dock inserted an exploring needle into the right side above the level of the fluid and we connected it with a water manometer. There was a rise in the column of water of eleven centimeters. No change in the level of the fluid was produced by deep breathing, probably because of the paralysis of the diaphragm, the dimished expansion, and the physical alterations in the left lung. When the patient coughed, the pressure was increased, so that the column of water rose another eight centimeters and remained stationary, due most likely to a valvular opening. About three hundred cubic centimeters of gas was then collected in two samples by Doctor Bigelow and Doctor Lind, when fluid began to escape from the needle. Analysis of the gas by Professor Bigelow showed 8.6 per cent of carbon dioxid; after this the first sample was unfortunately lost. The second sample contained 1.2 per cent of oxygen, 8.2 per cent of carbon dioxid, and 90. per cent of nitrogen. This points to a closed cavity, though the number of samples of gas examined should be greater to speak with positiveness. The fluid is greenish-yellow, turbid, and purulent.

The patient has, then, a pyopneumothorax on the right side, doubtless of tuberculous origin; the point of communication between the pleura and the bronchi is probably closed by a valve. There is extensive tuberculous disease in the left lung. The sputum contains tubercle bacilli and yellow elastic tissue.

ECTOPIC PREGNANCY.

Doctor William H. Morley: The case I wish to present to you this evening is number 1452, and entered the Gynecologic service November 4, 1905. The patient is twenty-eight years of age, married twelve years, and has two children, both living. Family and personal history are negative. Menses appeared at age of twelve, and have been regular. Patient's appetite and digestion are good. Bowels and bladder negative.

Present trouble began about six weeks ago with an attack of sharp, lancinating pain across the lower abdomen. Other similar attacks about every three or four days. This condition persisted with varying frequency for three weeks, when patient was taken with a severe attack of pain in lower abdomen, and compelled to take to her bed. A physician was called, who discovered a bunch in the left inguinal region about the size of the two fists. About a week later during a severe attack, patient vomited a "lot of green stuff." A few days later, had a second attack of nausea and vomiting. During the first four weeks of her trouble, patient had a bloody discharge, requiring two napkins a day. Her regular menses were due October 21, which date came during the four weeks of bleeding mentioned above. Patient could notice no difference in the discharge. It coincided with the menstrual flow.

Examination November 4, 1905, by Doctor Peterson. A mass was found to the left of the median line near Poupart's ligament, immobile, tender, and evidently arising from the pelvis. Clitoris free, external perineum intact, internal perineum torn, R. V. O., bilateral laceration of cervix, fundus uteri not palpable. Entire pulvis and culdesac filled with a tender, doughy mass.

On admittance the patient had a temperature of 100.4°, a pulse of 96, and a respiration of 24. These varied with the morning remission and evening rise until November 6, 1905, or forty-eight hours after entrance. At 4 P. M. the temperature suddenly rose to 103°, and the pulse to 138, and at 6 P. M. to 104°, with a pulse of 120. The patient was in such a precarious condition that surgical intervention was deemed necessary, and she was immediately prepared for operation.

Under anesthesia a vaginal examination was made, but no additional light was thrown upon her condition. Although the history pointed strongly to ectopic gestation, the diagnosis of pyosalpinx could not be completely ruled out. In order to determine whether the mass contained blood or pus, Doctor Peterson inserted a trocar in the posterior culdesac, and drew off about twenty-five cubic centimeters of dark red blood, proving the diagnosis of extrauterine pregnancy.

Operation November 6, at 8 P. M., by Doctor Peterson. The abdomen was opened by a median incision twelve centimeters in length. On cutting through the peritoneum the abdomen was found to be filled with a large number of dark-red blood clots. There was a distinct odor, almost fecal, issuing from the abdominal cavity when it was opened. The intestines were matted together by recent adhesions, and the omentum covered a ruptured tubal pregnancy of the left side. After the removal of about four hundred cubic centimeters of thick dark-red blood clots, the left ovary and gestation sac were clamped off and removed. Examination of the right adnexa showed a hematoma of the right ovary, and the right tube enlarged and containing thick pus. The right adnexa were clamped off and removed. Complete and thorough toilette of the peritoneal cavity was impossible owing to the weakened condition of the patient, but the abdomen was washed out with a large amount of salt solution, and the patient received six hundred cubic centimeters of normal salt under the breasts. An opening was made in the posterior culdesac and a gauze drain inserted so as to cover up the raw surfaces in the pelvis. The omentum was brought down over the gauze so as to act as an aid in the protection of the abdominal cavity. The abdomen was closed with through-and-through silkwormgut sutures. Although the operation only lasted thirty-five minutes, the patient was considerably shocked, and the pulse rose to 160.

Immediately after the operation the patient showed considerable collapse, but was again transfused under the breasts with about six hundred cubic centimeters of normal salt solution. In addition she received saline transfusion per rectum.

The next day the patient felt much better and took some liquid nourishment. Toward evening she became less comfortable due to distention of the abdomen and unsuccessful attempts to expel flatus. On November 8, the second day after the operation, the patient's temperature dropped to 101°, with a pulse of 100 and respiration of 30. The patient looked and felt better, although the abdominal distention was increased and caused her great distres. As attempts to pass the rectal tube were unavailing, the abdominal binder was loosened and about fifteen centimeters of the gauze drain removed. This gave some slight relief, although attempts to pass the rectal tube were still unsuccessful. During the night, however, the patient passed flatus per os and per rectum, and on November 9, or three days after the operation, she felt somewhat relieved. Patient complained at times of sharp pain in lower right side, but was otherwise comfortable. From this time on the patient has steadily improved. The gauze pack was removed from the posterior culdesac under irrigation, and a douche of sterile water given.

The prognosis in this case was at the time of operation far from good. But at present, while the patient is by no means out of danger, she should recover.

The interesting points in this case may be summed up as follows:

(1) The almost typical history of ectopic gestation.

(2) The simulation to pyosalpinx from the physical findings.

(3) Proof of the diagnosis of extrauterine pregnancy from aspiration of the posterior culdesac.

(4) The election of the abdominal rather than the vaginal route.

(5) Recovery notwithstanding the severity of the symptoms

ANEURISM OF THE ABDOMINAL AORTA.

Doctor Paul Miller: I wish to report the case of a male, aged forty-five years, laborer by occupation, who was admitted to Doctor Dock's clinic October 4, 1905.

Complaint at time of admission was of pressure about heart, inability to sleep on account of pain, shortness of breath and loss of weight. Family history not obtainable. During last ten years he has had stomach trouble and constipation; used tobacco immoderately and drank considerable. No history of syphilis, but suffered gonorrhea several years ago. A short time previous to beginning of present trouble patient was kicked by a horse. About August 20, 1905, he first noticed pain in epigastrium and left hypochondrium, which was more intense at night and following eating. Later the pain became more noticeable in left side and back. Nausea, but no vomiting. He was treated for some time before coming here for stomach trouble.

On examination the patient was found emaciated and exhibiting expression of anxiety and worry. Lungs negative. Heart not enlarged; systolic murmur at apex; radial pulse full, bounding. In the epigastrium, to left of median line, an expansile tumor about the size of an orange was found, the impulse of which was synchronous with the apex beat; palpable thrill over tumor; systolic murmur heard over tumor; femoral pulse retarded; low tension.

Patient died the day following admission.

Autopsy revealed sacculated aneurism of abdominal aorta; sac lying just below diaphragm and ten centimeters above bifurcation, and adherent to the left leaf of diaphragm, through which it had burroughed, rupturing into the left plural cavity; left lung entirely surrounded by clot weighing one thousand nine hundred sixty-five grams.

Points of interest in the case are symptoms which at first simulated those of gastric disturbance, leading to error in diagnosis. Also death by rupture into plural cavity.

CLINICAL SOCIETY OF THE NEW YORK POLYCLINIC.

STATED MEETING, NOVEMBER 6, 1905.

THE PRESIDENT, JOHN J. MACPHEE, M. D., IN THE CHAIR.
REPORTED BY FREDERICK C. KELLER, M. D., SECRETARY.

READING OF PAPERS.

"A SERIES OF INTERESTING PATHOLOGIC FINDINGS."

DOCTOR FERDINAND M. JEFFRIES contributed a paper bearing this title. He said, in part:

In the study of anatomy one is impressed by the frequent departure from what is accepted as the standard. A vessel divides anomalously, an organ is misplaced, or there may be a total transposition of the viscera. We wonder at these unexpected variations more than when we encounter unusual conditions in plant life, because we feel that we can account for such alterations by some extraneous influence, the nature of which we may only surmise, or concerning which we must confess ignorance, or we may attribute them to the effects of hybridizing, or again to a natural reversion to the original type.

Throughout the entire practice of medicine one rarely encounters a disease which so far conforms to its type in all its manifestations as to be classical. In some points it may be deficient, in others unusual phases are encountered. In animal and plant life we recognize the law that like begets like, each genus producing its kind. This law remains unbroken even to the depths of the bacteriologic world. The laboratory worker, because of the nature of his work, encounters a goodly number of phenomena, and such collections are the more valuable because in many instances several years' subsequent history is available.

The first specimen I show you is a fatty embolus of the lung. Fatty emboli occasionally are produced after fractures and after certain operations. A few years ago I was called to make examinations of certain organs to aid the prosecution in a case involving the care of an insane patient in one of the city institutions. The family of the deceased accused the hospital attendants of being responsible for the death of the patient. Two hospitals were in dispute as to the accounting for five fractured ribs discovered at autopsy. Those at the first institution at which the patient was confined declared that no ribs were broken when the patient left it; the others as strenuously asserted that he had no fractured ribs when he died, therefore the breaks occurred after death in the handling of the body. In court it was but necessary to convince the jury that fatty emboli could not be produced after death.

In the same set of organs a granular ependymitis was discovered. The ependyma is a very thin and delicate membrane lining the cerebral ventricles. Acute inflammation of this membrane in which small granular elevations are produced on the surface of the ventricles is nicely shown in the specimen.

The next specimen is adrenal tissue found in the kidney. This condition, while regarded as sarcomatous in character, is known as struma superrenalis. I can only conclude that early in the embryonic state a bit of adrenal tissue, possibly only a cell, wanders away from its own and becomes enclosed in a kidney structure, where it remains dormant until some force acts to give it vitality, and it forthwith begins to manifest itself by producing its kind. The specimen shown was removed by Doctor Ladinski from a woman fifty-five years of age. Her trouble dated from the beginning of her menopause, three years previously, so that this particular neoplasm remained dormant for fifty years or more when the physiologic processes of that period in the woman's life were sufficient to excite the foreign cell or cells to activity.

A still more striking exemplification of this wandering character of cells is shown in the next specimen, in which two nodules of apparently normal thyroid tissue are seen embedded in an otherwise normal lymph gland. This was removed by Doctor Wyeth from the neck of a woman a few years ago.

A malignant adenoma, the structure of which is typical of pancreas, is the next on the list. This was removed from the abdomen of a child nine years of age about a year ago. There were masses of this tissue everywhere in the abdominal cavity, which was greatly distended by their bulk. The child is still alive, but the growth is continuing, and at last accounts considerable trouble was being experienced in securing action of the bowels, and no hope was entertained for the recovery of the patient.

A peculiar form of sarcoma is the next specimen. This is from an infant, and was described as a large growth in the abdominal cavity. Its structure, whilst distinctly sarcomatous, is yet arranged in bodies which are, to say the least, very suggestive of Malpighian bodies. The tissue came from Doctor Rolater, of Oklahoma City, and no further history accompanied it.

Cancer of the appendix is rare. Primary cancer of the appendix is still more rare, and therefore primary cancer of the appendix in a girl fifteen years of age would hardly be expected. Yet such are the facts concerning the next specimen. The growth was situated at the tip of the appendix, and was not much larger than a grain of wheat. It was removed by Doctor Goffe five years ago. He says that the patient is still alive and in good health. The girl's family history makes mention of cancer in other members of the family. One would presume that the prognosis in this case should be good.

Endotheliomata are fairly rare, and most of those reported are associated, in their origin at least, with endothelial membranes. An endothelioma of the jaw is here shown. It is from a man thirty-nine years of age, and was described as a tumor of the jaw the size of a hen's egg. It was attached to the left submaxillary triangle, and was of two years' standing. It was removed by Doctor Bodine, and the patient is still alive and in good health, although three years have elapsed since the operation.

Many other unique and interesting specimens are here exhibited, the last three being an epithelioma from a horse, carcinoma from a dog, and a sarcoma from a canary bird.

REPORTS OF CASES.

SYRINGOMYELIA,

DOCTOR CHARLES J. LYNCH: This patient is an Austrian, forty-four years of age; married; no children. She was perfectly well up to ten years ago last August, when she began to suffer from pain and weakness of the upper extremities on attempting to do any work. Her symptoms became gradually worse, and about five years ago her hands became deformed. This deformity is most characteristic, and at once suggests the condition from which she is suffering, syringomyelia. The condition is rare and is due to cavitation of the spinal gray matter or a congenital dilatation of the central canal of the spinal cord, when it is known as hydromyelia, the analogue of hydrocephalus. Syringomyelia is usually the result of a neoplastic process or hemorrhage of the gray matter of the cord and the resulting secondary degeneration of the central portion gives rise to the cavity.

The diagnosis of syringomyelia rests upon the presence of three characteristic sypmtoms. In this case, as in the majority of instances, all three are present. The existence of any one of the symptoms should excite suspicion, but the presence of any two makes the diagnosis possible.

These symptoms are: (1) The disturbance of sensation known as Charcot's dissociated anesthesia, that is, the loss of sensation of pain and temperature in any part of the body, with preservation of the tactile sensibility in the analgesic area; (2) The trophic disturbances in the skin, muscles, bones or joints; (3) The progressive muscular atrophy with the accompanying weakness. We also meet with associated conditions, that is, spastic paralysis; disturbances of tactile senses with pain; transverse myelitis; myelitis involving the posterior colums of the cord; spinal deformities; eye symptoms; speech defect; bulbar paralysis, et cetera.

The patient presented is a typical clinical picture of this condition, the lesion being situated in the cervical portion of the cord. The symptoms depend upon the location and extent of the lesion according to the anatomical paths in the cord whose physiological functions are interfered with or impaired. On close inspection, marked wasting (atrophy) of the muscles of the thenar and hypothenar eminences of both hands, also of the interossei, is observed, while overaction of the unimpaired muscles gives rise to marked deformity of the hands. The wrist joint of the right hand shows the characteristic deformity known as Charcot's joint. The muscles of the forearm of the right side are wasted, while neither the left forearm, arm or shoulder are involved.

There is well-marked cervical dorsal kyphosis, while the drooping of both shoulders, with retraction of the chest produces the deformity known as Marie's thorax en bateau. The reflexes of the upper extremities are present, while in the lower extremities they are exaggerated with extension response. There is no ankle clonus nor disturbance of the organic reflexes or of sensibility.

Bullous eruptions of the skin, herpes, perforating ulcers, shedding of the nails, hair, teeth, spontaneous fractures of the long bones, and painful red swellings of the extremities are occasionally met with in this condition. When pricked with a pin over the hands, forearms, arms and shoulders, the patient presented shows no evidence of pain, but when pricked anywhere below the mid-dorsal region in front or behind, she immediately jumps and cries out.

As to differential diagnosis, in a case so typical there is no danger of confounding it with any other condition excepting intraspinal tumor. If the case is seen early and the dissociated anesthesia is absent, it might be confounded with several conditions, of which pachymeningitis cervicitis hypertrophica stands first. This condition, Charcot's Joffroy's syndrome, is a chronic inflammation of the inner layer of the dura mater of the spinal cord, which is characterized by thickening of the membrane, which compresses the nerve roots and spinal cord, resulting in atrophy and sclerosis.

Syringomyelia runs a chronic course. It may progress slowly for years, or may remain quiescent, as in the case presented. No treatment is of any value.

GALL-STONES.

DOCTOR JOHN A. BODINE: This patient is seventy-two years of age, the mother of a large family. She has suffered more or less pain in the region of her stomach all of her life, but has attributed it to indigestion, never at any time having been jaundiced. Pain became so severe that she consulted a physician a few weeks ago. A diagnosis of gall-stones was made, but the speaker did not make up his mind whether or not to advise an operation because of the patient's age. Palliative measures were suggested. Later, she demanded relief at any reasonable risk. When the abdomen was opened an appalling mass of adherent omentum and intestines was encountered. The line of cleavage was quickly found and the adhesions broken up. In a bed formed by the adhesions between the colon, omentum and liver, thirty-six large gall-stones were found. There was no bile and not a trace of the fundus of the gall-bladder. As soon as the last stone, which was impacted in the neck of the gall-bladder, was removed, bile made its appearance. As there was no gall-bladder to suture to the wound, the margins of the adventitious cavity containing the gall-stones were sutured to the abdominal wound and a tube inserted for drainage.

This case illustrates the amount of destruction that may be accomplished with no symptoms other than those attributed to a long-continued dyspepsia; and it also shows that at seventy-two years the age-limit of the beneficence of general surgery has not been reached.

PARALYSIS OF THE FACIAL NERVE.

Doctor Bodine: I also wish to show a patient on whom I operated five days ago for paralysis of the facial nerve. Twenty-three years ago the woman had facial erysipelas, which was followed by facial paralysis. At present there is ordinary atrophy and flaccidity of the cheek, the staring eye and the mouth twisted over to the well side. An attempt to cure this patient seemed justifiable, as six cases had been reported in which the dead facial nerve was attached to a nearby motor trunk and two patients had been cured. The best results, however, follow those cases of facial paralysis due to traumatism, as in mastoid operations.

I have not attempted an operation for a long time that was easier, technically, than the one I performed on this patient. The facial nerve in this case was represented by a mere fibrous cord, in which, however, some axis cylinder was discovered. The spinal accessory nerve was not utilized, for if it is not cut in two and an end-to-end anastomosis performed, every time the patient laughs the shoulder jerks. If the nerve is divided, there is a troublesome atrophy of the shoulder muscles.

For anatomical as well as physiological reasons, the motor nerve selected was the hypoglossal. The muscles of the tongue supplied by this nerve are in closer communication anatomically and physiologically than those of the spinal accessory, although the latter nerve is much more easily found and identified.

After the incision through the skin and superficial fascia, beginning at the level of the external anditory meatus and extending downward for two inches along the anterior edge of the sternomastoid muscle, one must be careful to separate the carotid gland from the anterior edge of this muscle without injury to its capsule, otherwise the carotid secretion will flow into the wound. Detracting the carotid gland toward the edge of the sternomastoid muscle posteriorly one may readily identify the styloid process, and winding around its base is always to be found the facial nerve. It does not require five minutes to expose and identify this nerve. The transverse process of the second cervical vertebra is next identified, and just anterior to this and posterior to the internal jugular vein, beneath or imbedded in the loose fascia, lie the pneumogastric and hypoglossal nerves. The positive identification of the hypoglossal is made by pinching it with thumb forceps, or by electrical stimulation. Usually, however, the more superficial of the two nerves is the one in question. A slit is made in the sheath of the hypoglossal nerve, and after cutting the divided facial nerve wedge-shaped, the latter is wedged into the slit and held by two sutures through the sheath, and the wound closed without drainage. Up to the present time the result has been good, but three or four months must elapse before permanent results will be apparent.

DISCUSSION.

Doctor William B. Pritchard: A difference of opinion exists as to how long after paralysis occurs anastomosis can be attempted with success. The concensus of opinion is that it should be done within four or five years, as within this period of time the nerve to a certain extent is in an active condition.

ORIGINAL ABSTRACTS.

SURGERY.

By FRANK BANGHART WALKER, Ph. B., M. D., Detroit, Michigan.
PROFESSOR OF SURGERY AND OPERATIVE SURGERY IN THE DETROIT POSTGRADUATE SCHOOL OF MEDICINE: ADJUNCT PROFESSOR OF OPERATIVE SURGERY IN THE DETROIT COLLEGE OF MEDICINE.
AND
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CLINICAL PROFESSOR OF SURGERY IN THE UNIVERSITY OF MICHIGAN.

PROSTATIC AND PERIPROSTATIC ABSCESS.

Samuel Alexander, M. D., New York City, in the *Annals of Surgery*, December, 1905. Prostatic abscess is a collection of pus within the capsule of the prostate. Though occurring frequently it is often not recognized until important parts of the gland are destroyed by suppuration. Periprostatic abscess is formed by an extension of the infection outside of the capsule. The pus may be confined above the triangular ligament, or it may reach the perineum or ischiorectal region. These abscesses, single or multiple, are due to infection extending from the urethra. Such infection may follow repeated attacks of gonorrheal urethritis, improper use of injections, or instrumentation, particularly the use of the catheter in enlargement of the prostate. It may occur as a complication of stricture. Infection may pass through a wound in the prostatic urethra but more frequently through a duct. One or more lobules may be involved. It is not always caused by the same infection though the gonococcus is usually blamed for it. Abscesses are frequently mistaken for mere inflammations. Small abscesses that break into the urethra may cause much trouble by deficient drainage. Relapses of urethral discharge may be due to recurrence of abscesses.

A prostatic abscess may not rupture for several weeks, and, when the opening thus formed is large enough for drainage, may heal without operation while others may have a less fortunate termination. In some cases after rupture, urine may enter the cavity, causing a rapid extension of suppuration. Abscess begins in that part of the gland that lies behind and to the side of the urethra. The pus follows the line of least resistance and makes an opening in the side or floor of the urethra. When pus breaks through the capsule it is found between the rectum and prostate and in rare instances may penetrate the rectum. When an abscess opens into the urethra and into the rectum or perineum at the same time a troublesome fistula is formed.

The symptoms differ according to the character and extent of the infection and clinical conditions. Small abscesses close to the urethra frequently are more distressing than large ones. There is pain, partial or complete retention of urine, and rectal tenesmus. Retention may come slowly or rapidly, according to the position of the abscess. There is usually chill with rise of temperature, going up two or three degrees and in one or two days falling back to normal, the temperature remaining steadily up only in cases of general septic infection. When there is spontaneous opening with a flow of pus the symptoms will diminish in intensity. Rupture may occur during rectal examination or catheterization. Rectal examination is necessary for positive diagnosis. Fluctuation is not always detected. A larger amount of albumin in the urine than can be accounted for by pus I have found an important point in diagnosis. This is probably due to serum escaping into the urethra from inflammatory edema of the surrounding parts.

Operation should be performed as soon as possible after diagnosis. The principal operations are: incision and drainage through the anterior wall of the rectum; mechanical opening by means of a sound passed into the urethra; incision through the capsule and sheath after exposing the posterior surface of the prostate by a curved prerectal incision or by drainage through a median perineal section. Opening by rectal incision or by sound are operations that should not be practiced though they are still mentioned in the modern text-books. Opening the abscess through the capsule after prerectal incision is the method followed by most surgeons but has its disadvantages.

The writer treats all forms of prostatic abscess by opening them into the prostatic urethra through a median perineal incision. The operation consists in opening the membranous urethra on a staff. A finger is introduced into the prostatic urethra and another into the rectum. The abscess if present, or the cavity if opened, can readily be detected. An opening is made with the finger large enough to ensure free drainage. A large catheter is passed into the bladder through the perineal wound and is retained in place until the third day. The patient is out of bed by the end of the first week, and the wound should be entirely healed by the end of the fourth. In periprostatic abscess, when the pus is above the triangular ligament it is reached by a perineal incision and the cavity explored with the finger. Abscess in the ischiorectal fossa requires a second incision for complete drainage.

A history of eight cases is given with treatment and results.

C. G. D.

OBSTETRICS.

By **WILLIAM HORACE MORLEY**, Ph. B., M. D., Ann Arbor, Michigan.
DEMONSTRATOR OF OBSTETRICS AND GYNECOLOGY IN THE UNIVERSITY OF MICHIGAN.
AND
WALES MELVIN SIGNOR, M. D., Ann Arbor, Michigan.
ASSISTANT IN OBSTETRICS AND GYNECOLOGY IN THE UNIVERSITY OF MICHIGAN.

TREATMENT OF PUERPERAL INFECTION.

Von Rosthorn (*Deutsche medicinische Wochenschrift,* 1905, Number XXIII) describes clearly and somewhat at length the local and general theraphy of child-bed fever as today employed. At the outset, the author emphasizes the inadvisability of curettage. This operation is indicated only in incomplete abortions and then a dull curet is to be employed. At the first appearance of fever, after a careful bacteriological examination of the lochia, he advises intrauterine douches in large amounts (six to eight quarts) under moderate pressure, with a not too concentrated antiseptic solution without the employment of tenaculæ and with a catheter having a good return flow. At the same time, ergotin is indicated to bring about uterine contractions, thereby closing the lymph channels and preventing extension of the septic focus. Transfusion with normal salt solution (one thousand to two thousand cubic centimeters daily) and nuclein in large doses (five to six grams twice daily) are indicated in exsanguinated and weakened patients. Hysterectomy, the author considers necessary only in the following complications, namely, suppurating new growths of the puerperal uterus (carcinoma, myoma) rupture, inversion, prolapse or the impossibility of removal of decomposing membranes. The resection of veins in selected cases may prove of value. The use of silver preparations (that is, argentum colloidale) can without any danger be highly recommended either as an inunction or intravenously. Serum theraphy will in early stages prove of benefit if used in large doses. It has also great value as a prophylactic. W. H. M.

HERPES ZOSTER DURING THE PUERPERIUM IN A CASE OF ECLAMPSIA.

Neu (*Monat. für Geburts und Gynäk.* Bd. XXI, Heft 4) reports this interesting complication. On the fifth day of the puerperium of an eclamptic patient, a typical case of herpes zoster lumbofemoralis took place. The area of attack corresponded to that supplied by the first and fourth lumbar nerves. The cause of the complication lay, according to the author, in injury to the ganglion of the fourth nerve, which came about either from the toxin of eclampsia or from the hemorrhage which could have arisen from the great increase of blood presure during the convulsions. W. H. M.

ETIOLOGY OF ECLAMPSIA.

Liepmann (*Transactions of the Eleventh Deutsche Gynecological Congress,* 1905) makes a report of his recent investigations and comes to the following conclusions:

(1) Eclampsia is a disease due to an intoxication.

(2) The eclamptic toxin originates in the placenta.

(3) The convulsions arise from this toxin acting on the cells of the brain.

(4) The toxin can be stored up in the liver and gradually given out to the organism or can be destroyed in the liver.

(5) The previous specific excitement of the brain of the parturient is increased from the anemia which arises after delivery and hence the action of smaller quantities of the toxin are made possible.

W. H. M.

PEDIATRICS.

By ARTHUR DAVID HOLMES, M. D., C. M., Detroit, Michigan.

DIAGNOSIS OF CEREBROSPINAL FEVER.

Mailhouse says (*Pediatrics,* January 19, 1905): "It is not difficult to diagnose a typical case during an epidemic. Sudden onset, headache, vomiting, fever, pain in the neck muscles and rigidity and delirium form a characteristic clinical picture. On the other hand, rapid ambulant and sporadic cases are difficult; for rheumatism and otitis media give rise to similar symptoms." The author ascribes great diagnostic value to Kernig's sign and also to the presence of the diplococcus in the fluid obtained by lumbar puncture; to early taché cérébrale, dilatation of the pupils on flexion of the head on chest and contraction on bringing the head back again, and to herpes. The author lays stress on the sudden onset, early coma, prominent spinal symptoms, early rigidity, retraction of head, acute course, herpes, early Kernig's sign, marked general hyperesthesia of skin, less frequent paralysis of cranial nerves, deafness and absence of teeth-grinding and hydrocephlac cry, as distinguishing it from the tubercular form.

ENURESIS.

Clemens states (*Archives of Pediatrics,* March, 1905) as his conviction that physicians too frequently treat the smyptoms of this condition rather than the underlying cause. He says that in his experience the four commonest causes of incontinence of urine are, in order of frequency:

(1) Hyperacidity of urine (a condition persisting by day and night).

(2) Adenoids (noctural incontinence—true enuresis).

(3) Chronic interstitial nephritis (noctural and diurnal incontinence).

(4) Alkalinity of urine (due to fixed alkalies—incontinence by day and night).

He differs from many clinicians in that he regards chronic interstitial nephritis fairly common in little children. He directs attention to the alkalinity of urine as a cause of incontinence and advises as a remedy for this condition the administration of acid, sodium phosphate, a drug difficult to obtain.

ACUTE PYELITIS IN INFANCY.

Freeman reports (*Archives of Pediatrics*, Number XI, Volume XXII) a case of acute pyelitis in a male child eight months old, who was seized with acute vomiting and high fever. The treatment was directed to the gastroenteric symptoms until the urine was examined and found to be markedly acid; specific gravity, 1010. It contained pus, hyaline casts, albumin and pure cultures of the bacillus coli communis. Treatment was then changed to urotropin and citrate of potash. Recovery gradually ensued. Most of these cases are in girl babies, and are caused by the bacillus coli, and are often overlooked in consequence of the symptoms simulating those of gastrointestinal disturbance.

OPHTHALMOLOGY.

By WALTER ROBERT PARKER, B. S., M. D., Detroit, Michigan.
PROFESSOR OF OPHTHALMOLOGY IN THE UNIVERSITY OF MICHIGAN.

PRIMARY MELANOTIC SARCOMA OF THE EYELIDS.

Richard H. Johnson, M. D., of Baltimore (*Ophthalmology*, 1905) says primary melanotic sarcomata of the lids are rare, there being only twenty-three on record.

A young man, twenty years of age, came into Doctor Harlan's clinic in the Presbyterian Hospital last December, 1904. There was a small dark spot on the lower lid, which, in the past year, had increased in size, and he thought it advisable to have it examined. His general health was apparently good; no history of tuberculosis or syphilis.

On examining the eye there was found a small round swelling about the center of the lower lid between the skin and conjunctiva, the skin being freely movable over it, with no pain on pressure. Through the skin and conjunctiva could be seen a dark pigmented shimmer. There was no sign of ulceration. Melanotic sarcoma was suspected and a triangular piece of lid removed. The piece was hardened and cross-section made which revealed numerous masses of pigment, scattered irregularly through the specimen. They could be seen just beneath the skin epithelium and behind not far from the conjunctiva. The cells corresponded closely to the pigment distribution. The epithelium on both surfaces was normal.

The etiology is obscure, and the disease is probably more common in women than in men. In some cases there seems to be a causal relation between a pigmented nevus and the appearance of tumor. Some writers have emphasized the importance of an injury on or about the lids as causative of the neoplasm. Dunbar, Zelender and Van Duyse have seen sarcomata develop on the site of traumatic ecchymoses of the lid. Guibert's case followed cicatricial tissue from burn. Enslin's case followed injury in region of pigmented nevus. This author believes that a pigmented nevus has existed before and that some injury to the congenital mark provokes malignancy.

Guillement divides sarcomata into palpebral sarcomata, properly speaking, and sarcomata arising in the palpebral conjunctiva. In the first form the tumor resembles a chalazion and if it is removed it promptly recurs. If left alone it gets larger and presents variable consistence, sometimes soft and again hard. If, in the beginning, the tumor is movable on the tarsus and easily separated from the same, it is readily diagnosed from chalazion, for this is always aberent to the tarsus. It is important as regards diagnosis if the neoplasm develops on the site of a blood infiltration. The skin remains movable on the surface of the tumor for a long time. The pigment showing through as the skin gets thinner. Ulceration may occur when the tumor becomes large. Pain, if any, is slight. Vision is often impaired.

According to Van Duyse & Faye sarcoma arising from the palpebral conjunctiva has a tendency to be pedunculated. It develops from the cellular tissue which unites the conjunctiva with the tarsus. These sarcomata usually involve all the neighboring structures, the bulbus being the last to be attacked. La Grange claims that the pigment results from the transformation of the blood pigment or is the product of a special cellular formation. Enslin claims that pigment is physiologically present in the lids, tarsus and conjunctiva and that the coloring matter of tumor is derived from this.

Prognosis is usually bad. The best results are derived from early removal. Rapid recurrence is the rule. Years must elapse before we can feel sure of a cure from operation.

EDITORIAL COMMENT.

SOME CLINICAL ASPECTS OF LABORATORY ACHIEVEMENT.

THE laboratory investigator has solved many problems of clinical value to the practicing physician. It is not the intention of the writer to present testimony in support of this declaration, as the rewards of remote investigation are conspicuously apparent to every person engaged in the pursuit of medicine. The practical significance of recent discovery is of momentous concern, however, and consequently the laboratory achievement exemplified at the late Ann Arbor meeting of the American Society of Naturalists and affiliated scientific societies is entitled to careful consideration. A number of live societies are embraced in the central branch of this national organization, but the Association of American Anatomists, the American Physiological Society, and the Society of American Bacteriologists comprise the guilds most closely identified with medicine, and hence observations will be confined principally thereto.

* * *

Erlanger demonstrated heart-block in the dog, a condition calculated to explain the phenomena characteristic of Stokes-Adams disease in man. An account of the initial experiments of this investigator appeared in the *Zentralblatt für Physiologie,* Band XIX, Numero I, 1905, but a supplementary paper has been contributed to the *American Journal of Physiology* for January, 1906. With an ingenious contrivance the author has been able to induce partial or complete block in the dog by compressing the narrow band of muscle—the auriculo-ventricular bundle of His—connecting the venous and arterial chambers of the heart. Inasmuch as no nerve trunks have been found in this region conduction from auricle to ventricle is probably muscular. Compression of the tissue forming the bundle alone will block the passage from auricle to ventricle of the impulses which normally cause the heart to beat. If pressure on the auriculo-ventricular bundle is carefully graded every stage of heart-block may be obtained; for example, 2:1, 3:1, 4:1, rhythm, even to complete block, and when the latter condition is reached the ventricles cannot be inhibited through the vagi, or but minimal reaction can be obtained. When the block is partial, however, vagus inhibition of the ventricles may be obtained at least as easily as when the conductivity of the auriculo-ventricular junction is normal, but the duration of the ventricular inhibition varies inversely as the degree of block when the vagi are stimulated with maximal tetanizing currents. The influence of the accelerator nerves is still exerted over the ventricles after the establishment of complete block. When the block is complete the ventricular rate suddenly decreases—practically stops beating, but after a period of standstill the rate gradually increases to the degree which is usual in complete heart-block. This cessation of the beat may possibly account for the syncopal attacks of Stokes-Adams disease.

* * *

Lombard demonstrated for Wiggers the action of adrenalin on the blood-vessels of the isolated brain. For long it has been suspected that adrenalin will contract the cerebral vessels, but it has been difficult to determine experimentally whether the drug acted on the vessels of the brain directly or the system generally. Wiggers apparently determined the matter by decapitating a canine, and inserting a cannula into the basilar artery while the tissues were yet vested with power to react. The isolated brain was perfused under constant temperature and pressure with a suitable solution, and the entire venous outflow continuously recorded, this procedure insuring detection of influences which alter the calibre of the vessels. The addition of an adrenalin solution to this preparation, and in manner calculated to preclude the introduction of factors themselves conducive to outflow change, produced reactions which correspond to those obtained from vessels in other regions. If these reactions are induced through the stimulation of vasomotor nerve ends, as claimed by certain workers, this demonstration would seem to supply physiological evidence of the existence of such nerves.

* * *

Novy detailed the results of his studies with the *Spirochæta obermeieri.* The organism was obtained by Doctor Norris from a case of relapsing fever by inoculating the blood into monkeys and white rats, and has been kept alive by successive transmission from rat to rat for over two months. From thirty-six to forty-eight hours after intraperitoneal injection the parasites appear in the blood of the inoculated animal, disappear within the next twenty-four hours, and do not reappear. Immunity is now established. A marked preventive and curative action is exerted by the blood of rats which have been rendered immune. Spirochetes fail to appear when such blood is injected before inoculation. Neither does infection result when immune and spirochetal blood are injected simultaneously. Even when immune blood is injected subsequently to inoculation with spirochetes infection will not result if immunity is sought within the actual period of inoculation, whereas in controls the spirochetes become numerous. The curative action of the blood is equally pronounced. Total disappearance of the spirochete from the circulation of rodents is insured, within one hour, by the injection of two cubic centimeters of blood. The parasites do not reappear. In the controls they persist for twenty-four hours. The practical application of the principle discovered contemplates the preventive and curative treatment of relapsing fever in Europe and of tick fever in Africa, both of which are due to different species of spirochetes.

* * *

Henderson discussed the question of surgical shock. Crile has advanced the theory that surgical shock is the result of a decreasing blood pressure due to exhaustion of the vasomotor center. The accelerated heart beat is an effort of the cardiac mechanism to relieve the fall of blood pressure. Record has been made by Henderson of volume changes of the ventricles, simultaneous with arterial or intraventricular pressure, in fifty dogs. In some cases the animals have been kept under observation for six hours after exposure of the thoracic contents. The first intimation of shock is an increase in the rapidity of heart beat, arterial pressure at this stage evidencing no alteration whatsoever. As the heart movements become more pronounced, diastolic pressure rises considerably, while systolic pressure in the aorta remains unchanged.

The pulse pressure is therefore considerably weakened. Eventually the stage arrives when the heart beats follow in such rapid succession that the diastolic interval is too short to permit of the ventricles filling. The heart being unequal to the emergency, death ensues. Although the idea prevails that cardiac muscle cannot be tetanized, Henderson believes that the changes wrought are directly due to tetanus of that organ.

* * *

Novy and Knapp detailed a method for isolating trypanosomes from accompanying bacteria. Generally speaking, it may be said that bacteria once introduced into a culture of trypanosomes tend to outgrow and check the development of the flagellates. In exceptional instances, however, bacteria thus introduced exert little or no interference and may be even apparently beneficial. The isolation of the trypanosomes in pure form from such mixed cultures is a matter of some importance when it is desired to study the pathogenic action of the flagellates. The need of some method of separation is particularly felt when pursuing the study of the mosquito trypanosomes which, since they are present in the intestinal canal, are invariably accompanied by various bacteria and yeasts. A method that may be successfully employed is to make a small glass spatula by drawing out the end of a glass rod, and with this agent spreading a little of the mixed culture in a series of streaks over six Petri dishes containing solidified blood agar. A Petri dish that can be sealed effectually by means of a wide rubber band is particularly adapted for this purpose. The sealed dishes are set aside at room temperature for ten or twelve days. The last plate or two of the series will then be found to show isolated colonies of trypanosomes which can be transplanted in the usual way to the test-tube.

* * *

The paper contributed by Koch dealt with the studies of Ehrlich and Hill on the metabolism of the nervous system. The conjoint opinion of these workers is that the cerebellar cortex requires a ready supply of oxygen in the execution of its normal functions. In another research Hill's results indicate that this oxygen is not perceptibly essential in the production of carbon dioxide. Attempts have been made in other experiments to emphasize the importance of phosphoric acid as a product of nervous activity. Under normal conditions phosphorus invariably enters the system in an oxidized form and hence could not be a product of metabolic oxidization. It therefore must be the result of the destruction of phosphorized lipoids and nucleins. An hypothesis has been ventured that the nervous system effects a metabolism by means of which there is elaborated from proteid a compound or compounds of fairly high molecular weight, which no longer respond to proteid or peptone tests but resemble rather the polyproteids. Compounds so far isolated contain four per cent of sulphur in a form easily split off as sulphates. The change in the state of oxidization of the sulphur affords a clue as to the rôle played by oxygen in this metabolism. The importance of these compounds to the nervous system is evidenced by (1) a comparison of the quantity of these compounds in nerve tissue with the amount found in other tissues; (2) an examination of cerebrospinal fluid during life and postmortem; (3) a chemical analysis of the cortex in cases of dementia præcox.

* * *

Mendel detailed the result of his coöperative experiments with Mitchell on the enzymes of the embryonic intestinal tract. Pig embryos were utilized in the studies, and maltase and lactase were very readily isolated. Lactase was the first of the intestinal enzymes to appear in embryonic development, while maltase was the most universal. Sucrase was not determined at all in embryonic life, but suckling pigs yielded the trio—sucrase, maltase, and lactase. The intestine of the adult pig afforded the sucrase test, while that for lactase was entirely absent. Evidences of a change in the intestinal secretion of the embryonic and adult dog were also apparent. Negative results were obtained in the pepsin and rennin tests in the embryonic membrane of the pig. The relation of these specific occurrences of the sugar-inverting enzymes to functional adaptations is worthy of further investigation.

* * *

Novy, MacNeal, and Torrey contributed a paper on mosquito trypanosomes. It has been known that bird trypanosomes grow readily in the test-tube on blood agar, and that the resulting forms resemble the flagellates which appear in the gut of mosquitoes fed on owls infected with Halteridium and with H. Ziemanni. The authors of this paper showed that trypanosomes which correspond to those obtained *in vitro* will likewise grow and multiply in the gut of mosquitoes. Large numbers of mosquitoes were fed on perfectly clean rats, guinea-pigs, and pigeons. At varying intervals the contents of the stomachs of the mosquitoes were examined in living and in stained preparations and cultures on blood agar were made at the same time. Over eight hundred mosquitoes were examined with the result that about fifteen per cent were found to have a flagellate infection of the intestinal tract, some exhibiting large masses of rosettes, flagella inside, completely filling the lumen of the bowel. The culture form of the two organisms is exactly the same as that found in the gut of the mosquito, thus confirming the view expressed that the flagellates found growing in the intestinal tube of insects represent cultural forms *in vivo,* and, as such, correspond to those obtained *in vitro.*

* * *

Norris, Pappenheimer and Flournoy conjointly presented a preliminary communication upon a spirochetal infection of white rats, and observations upon the multiplication of the spirochætæ in fluid medium. A subcutaneous inoculation of white rats, with blood containing spirochetes, is followed in two or three days by the presence of more or less numerous spirochetes in the circulating blood, which persist for one to three days, but relapses do not occur as in spirochetal infection of man and monkeys. The rats exhibit no obvious symptoms of illness, no local reaction, no visceral lesions of consequence, except turgescence and enlargement of the spleen. These statements are based on observations carried through a series of twenty-five generations of rats. Immunity is conferred by previous infection and by simultaneous inoculation of spirochetal blood, plus small doses of serum from animals that have gone through a previous infection. In the brief experience of these investigators the injection of spirochetal blood several days after subcutaneous inoculation has not prevented the development of infection.

* * *

Bean contributed a paper recounting the peculiarities of the Negro brain. A series of investigations reveal a dissimilarity in Negro and Caucasian brain development, the former being less capacious than the latter, variation in calibre depending on the mixture of Negro and Caucasian blood. The relative size of the frontal lobes is especially perceptible, the anterior association center being from ten to twenty-five percent less in the Negro. The functional power of this area extends over all other centers, and contemplates the egotistic relations, personality, orientation, esthetical and ethical faculties, reasoning in the abstract, written and spoken language, and the will. Negroes are classified into two main groups. In one the Negro traits predominate—the bulk of the Negro population of the South being in this group, while in the other Caucasian traits are in the ascendancy—this being the prevalent class of Negroes in the North. Each of the groups has several classes. The first is represented by (1) the Hottentot, (2) a low order of Guinea Coast Negro, and (3) a high order of Guinea Coast Negro. The second class is represented by (1) the Kaffir, Zulu, or Arab Negro, and (2) the Mulatto, which in turn is divided into three classes, the first embodying the worst traits of the Negro and Caucasian, the second—mottled class—the traits of the Negro, and the third resembling the Caucasian in appearance and characteristics. Local conditions represent the key to the attitude of the most advanced race of the world to the most backward, both in the North and in the South. The fact that in many rural districts of the South the Negro is fifteen times as numerous as the white accounts for the crimes, with the swift retributive justice following. This is confined to a few counties of the South, and is a matter of self-preservation, not of ideals.

* * *

MacNeal directed attention to methylene violet as the nuclear dye in the Romanowsky stain. In 1885 Bernthsen showed that decomposition of methylene blue by alkalies yielded methylene violet, methylene azur, and the leukobases of these substances and of methylene blue. The nuclear dye of the Romanowsky stain has been recognized as methylene azur, and a secret preparation of this dye is on the market. Unna has shown that azur is not the staining principle of his polychrome methylene blue. MacNeal attempted to isolate Nocht's "roth aus methylene blau" by extraction with ether, and 0.4 gram of this was obtained and identified by its chemical reactions as nearly pure

Bernthsen methylene violet. Methylene violet was next prepared by Bernthsen's method and its reaction compared with the ethereal extract of Nocht's solution. The next step was to combine methylene violet into a suitable staining mixture. It is insoluble in water but soluble in aqueous methylene blue solution. The formula is as follows: Methylene violet, 0.5 gram; methylene blue (medicinally pure), 0.5 gram; sodium carbonate (crystalline), 0.25 gram; glycerine, 50 cubic centimeters; distilled water, 50 cubic centimeters. The solid ingredients should be finely divided by trituration. It is used by mixing a few drops with dilute aqueous eosin and floating fixed preparations on the mixture for two to thirty minutes.

* * *

Hodge directed attention to a recent discovery in the field of zoology. The paper presented by this scientist recounted the characteristics of protozoal life as studied by Dellinger and represented in the ameba. Previous observations bearing on the nature and habits of this animal have been made from its superior surface, and consequently some erroneous ideas have gained credence. With a relatively simple apparatus Dellinger has been enabled to procure side-view photographs of the ameba and some of the allied forms. The mechanism consisted of an ordinary microscopic slide having the edge ground and polished at right angles with the surface, and with long cover slips cemented to both surfaces and extending beyond the polished edge. A narrow trough is thus made, along which the animals are pipetted, and with the tube of the microscope brought to a horizontal position, they move along the edge of the slide. Photographs of the lateral surface of the ameba disclose pseudopods extended in the line of advance, attached at their tips, and the bodies squeezed and pulled up to the point of attachment. These pseudopods may be few or many, long or short, and the whole ameba may be extended and attached at the ends, and thus progress much after the fashion of a measuring worm. The rolling of the ectosarc is avoided by lunging from side to side, or, what amounts structurally to the same thing, by walking on slender pseudopods. The investigations show that the animal is equipped with a suctorial mouth and that its locomotive motion is vastly different when seeking food and changing position.

ANNOTATIONS.

AN UNCOMMON TYPE OF INTESTINAL TUBERCULOSIS.

Richter, in a recent contribution, cites his experience as attending physician to twelve hundred families in the mining district of Germany, with an uncommon type of intestinal tuberculosis. The disease has gained unusual prevalence among these people, the children especially being victims of its ravages, and while the condition rarely terminates fatally, the symptoms are of sufficient gravity to cause alarm. Emaciation ensues with great rapidity, the appetite depreciates, and the patient suffers from abdominal pain, insomnia, slight fever, and general debility. Swelling of the cervical and submaxillary glands is noticed, and after the disorder has progressed to a certain stage, a chronic condition is reached, which is usually more severe in children past puberty. The disappearance of the disease is followed by anemia, emaciation, and general weakness, with subsequent recovery. The disease asserts itself more especially in children between one and four years of age. The author attributes the malady to the poor quality of milk procurable in the region, and to negligence in the observance of hygienic laws.

THE PROCESS OF CLEARING THE NASAL PASSAGES.

The art of clearing the nose of excretory accumulations receives consideration in a recent issue of the *London Practitioner.* While the process may seem simple enough to the unthinking, this contemporary emphasizes the fact that in common colds and catarrhal conditions, when the throat and pharynx are necessarily infected with streptococci, staphylococci, and other organisms, violent clearing of the nasal cavity is quite apt to result in the compressed air forcing the microbes through the Eustachian tube into the middle ear. Serious results from this procedure are readily perceptible, and a hint on the correct method of relief is indeed opportune at this season of mucous afflictions. Most individuals in using the handkerchief expel air violently through both nostrils simultaneously, which practice is very incorrect and unhygienic, in view of the foregoing. The correct method is to compress one nostril and blow gently through its fellow, subsequently repeating the process on the other side. The article cites an authority who prohibited his patients from blowing the nose at all, cautioning them to employ the handkerchief merely for the purpose of wiping away discharges.

THE SEA-AIR TREATMENT OF TUBERCULOUS BONES AND GLANDS.

The sea-air treatment of tuberculosis, with especial reference to affections of the bones and glands in children, received consideration from John Winters Brannan, in a paper before the American Climatological Association at its recent meeting. In reviewing the work of the New York Association for Improving the Condition of the Poor, at Coney Island, the author detailed the method of treatment at the experimental tent camp, in handling cases of hip disease, Pott's disease and tuberculous diseases of the bones and glands. The primary course pursued consisted in merely subjecting such conditions to open-air treatment. The patients were bathed daily in the salt water of the sea, and as the weather became too cold for such radical treatment, suitable quarters were provided, the temperature, however, being kept at a degree corresponding to the outside atmosphere, by a continuous infusion of air through open windows and doors. A remarkable improvement in external physical condition was evidenced, the facial color, circulation and general nutrition showing wonderful change. The children's quarters were securely closed for one hour each day, to permit of bathing and dressing, the clothing, by the way, being of extremely warm texture. The author states that marked improvement is eventually noted, some patients evidencing apparent cure after a year's treatment.

CONTEMPORARY.

THE HISTORY OF MEDICINE.

PART THIRD.—Continued from page 476.

THE ARABIAN ERA.

[DOCTOR JOSEPH P. WIDNEY IN SOUTHERN CALIFORNIA PRACTITIONER.]

AND now, after four centuries of rest, rather we might say of stupor, the human mind was again preparing for a step in advance, but this time it was neither Greek nor Roman. A people unknown to fame, almost unknown to history, were to be the moving power in the next great wave of progress. In the southwest of Asia, bordering upon the Red Sea, lies a land around which for thousands of years the nations of the earth have been born, had lived, and warred, and had died; and the place of their habitation knew them no more, but the land was strewn with the fallen columns of their ruined palaces, and the crumbling walls of their great cities. Persia, Assyria, had ceased to be, and those more ancient peoples of the times so old that tradition only vaguely tells of their dim shadows. Yet it remained. The armies of Alexander, of Cambyses, marched by it, but the tramp of their cohorts and the rumble of their chariot wheels never came to break the solitude of its desert sands. The wandering caravan with its patient camels; the clump of waving palms by the spring of living waters; and the hush of the lone night, with the solemn stars looking down through all its silent watches;—Arabia, and the Hebrew! Ishmael and Jacob! Lo, God has kept His word. It was the Arabic mind, which like the century plant had lived on, and on, through all the years, with the bud of its blossoming dormant, that was next to awaken to life, to burst into bloom, and to bear fruit. Out of its ancient polytheism arose a cry, verily a *"Vox clamantis in deserto,"* "There is but one God!" and to it the practical corollary, "and Mohammed is his Prophet." It was not the cry, but it was the fact that a race had reached the time for its regeneration, that aroused the land from the green valleys of Arabia Felix to the uttermost bounds of the desert. The cry was only the signal for the awakening. Within a century from the death of the Prophet, Mohammedism had swept from the banks of the Ganges to the far-off shores of the Atlantic, and had built up an empire that was no mean successor to Rome. Persia, Syria, Asia Minor, Arabia, Egypt, Northern Africa, and Spain were united under its sway, and for a period it seemed that the Crescent, and not the Cross, was destined to dominate the world. In the first years of propagandism and conquest, with the human race to subject, and the delights of paradise awaiting the faithful, no time could be spared for science. And, indeed, ignorance and fanaticism give no desire. Quick upon the message of the Amrou to the Caliph Omar, "I have taken Alexandria, the great city of the West," came the order to destroy its library, and the precious manuscripts, the accumulation of centuries, fed for months the fires of the public baths. Soon, however, the Caliphs recognized their mistake; and from that time on everything possible was done to foster learning. Two points especially became noted for their schools, Bagdad, the seat of the Caliphate, and Cordova in Spain. Literature, mathematics, astronomy and medicine again rallied around them the brightest minds of the age, and again the poet, the philosopher, the physician, became the honored guests and chosen companions of kings. The writings of the Greek philosophers and physicians were translated into Arabic. It would be interesting, did time permit, to recount somewhat of the discoveries and advancements in general science, and give a picture of the elegant, the refined civilization which sprang up in Granada, upon the banks of the Guadalquiver—a civilization of order, of gentle courtesy, of music, of laughter, and of song; and this too when the undrained forests of England and Germany and France were as yet scarcely more than the haunts of half-clad savages. But time will not permit, and these pleasant topics must pass until some more convenient season.

At Bagdad, in the eighth century, a medical school was founded by the Caliphs, which speedily became the center of the science for the Eastern world. Libraries were accumulated, public hospitals and pharmacies established, an authorized dispensatory for the preparation and prescription of medicines published by the government, and the most stringent laws passed to prevent the adulteration of drugs. The professors in the medical schools received regular salaries from the government. All candidates for license as physicians were required to appear before them for examination as to their qualifications; and so careful were the authorities of the welfare of their people, that no person was permitted to practice medicine unless he had been so examined and licensed. In this connection it is of interest to remark that we have just failed to enforce such a law in California, and that the most ignorant man in the land has, under the law, just as much right to take upon himself the responsibility of human life as the accomplished physician, graduated after long and arduous study from the best of schools.

The Caliphs of Bagdad, in the eighth and ninth centuries, were more careful of the lives and health of their people. Among the writings of the school at Bagdad may be especially noted works upon smallpox, upon measles, and upon stone.

In Granada the most noted school was at Cordova, although flourishing schools also grew up at Seville, Toledo, Saragossa, and other places. The school at Cordova had, in the tenth century, a library of 224,000 volumes. Dissection of the human body being contrary to the precepts of the Mohammedan religion, they had to depend for their knowledge of anatomy upon the translated works of the Alexandria school. The departments in which they especially excelled were pharmacy and chemistry. To this Arabian era we owe the first knowledge of alcohol, the corrosive chloride, and the red oxide of mercury, nitric, and nitro-muriatic acids, camphor, jalap, arsenic, borax and iron. Amony many writers may be mentioned Avicena upon medicine, Averrhoes upon medicine and philosophy, Albucasis upon surgery, and Ebn-Beithas upon materia medica.

In the eleventh century came the irruption of the Mongel Turks, overrunning southwestern Asia, and ending the Caliphate. The Turk of today is the true son of the Turk of the eleventh century, bigoted, fanatical, filled with contempt for learning, respecting only arms. A race of the sword, of the horse, of war. The Turk settled like a cloud upon the fair regions of Asia Minor, and schools of learning and light died out; and from that day to this the sleep of death has rested upon all that land. Knowledge struggled on for two or three centuries later in Granada, the western end of the old Mohammedan empire, but the gradual encroachments of the Spaniards, and finally the expulsion of the Moors by Ferdinand in the fifteen century, broke up the schools; the libraries were destroyed, and the Arabian era in the science of medicine came to an end.

During the latter part of the Arabian era the leading physicians of the courts of Europe were Jews. This seems to have been the only time in the history of the Hebrew race when the science of medicine received, to any great degree, their attention. The peculiarity of their relation to other races no doubt accounts for this. They, alone, kept upon terms of free intercourse with all lands. This gave them access to the schools of the Mohammedans, where they acquired a knowledge of medicine, and then, in their journeyings, they had abundant opportunity to make this knowledge available, and pecuniarily profitable in the less enlightened courts of Europe.

Allow me for a moment to recall a remark made in the early portion of this address. It was this: That in ancient times the type of mind of the dominant race gave stamp and color to the world during the age of its ascendancy. This rendered possible in science the great, well-marked eras which have been described—the Greek, the Alexandrian, the Arabic. But with the growth of modern civilization no one race has gained such undue prominence. Different races have developed more nearly contemporaneously. As a consequence, modern science is more diversified in its development, and takes type or color from no special blood. The great eras ceased with the Arabian. From that time on various nationalities helped in the development of medical science. For a while it seemed that evil days were again about to settle down upon the human mind. But schools gradually grew up in France, in Italy, and later in England and Germany, and the science of medicine, taking no backward step, has gone on, culling from the wisdom and experience of the past, investigating diligently, unweariedly, for itself; impressing into its service all other branches of human knowledge which may be made to contribute to its work, and filled with a just hope that the future may reveal to its questioning much now unknown, and throw light upon points now involved in obscurity.

It may possibly be asked, Why so much stress is laid upon the history, the labors, of the past, when our work lies in the present and the future? The reasons are these: The history of the theories, of the labors of our predecessors, shows many a fruitless field which they have tested, and abandoned as profitless; we need not go over it again. Again, the tale of their patient toils, with only the feeble help of other sciences, yet in their infancy, may teach us patience in our work. Again, a better acquaintance with the labors of the great men of the past may teach us a just and proper humility in estimating our own work. We, too, shall often be tempted to exclaim: "Is there anything whereof it may be said: See, this is new! Lo! it hath been already, of old time, which was before us." And when we read of the great advancement really made, and of the inefficient means with which those old men too often had to labor, we, too, shall feel that, "There were giants in the earth in those days." One other thing we learn; that these men were not simply physicians. They were more. They were men of wide attainments in all departments of science and philosophy, leaders of the thought of their age. Apart from the duty of a physician, as a well-read man, to know the history of his profession, I believe that he who knows only the writings of his own age, and to whom the works of his predecessors are as sealed books, can never become so competent, nor so thorough a physician. And then, it is a matter of just and honorable pride to know that one's chosen profession *has* a past; to feel that a heritage of great deeds and noble names is ours by right. It makes better men of us; it is like having good blood in one's veins. Gentlemen, it is no light thing to know that we are the inheritors, in the direct line of descent, of thirty centuries of professional labors and professional honor.

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MEDICAL NEWS.

A DISTRICT MEDICAL MEETING.

THE First Councilor District Medical Society held its second annual meeting in the new Medical Building at Ann Arbor on December 22, 1905. This organization comprises the county medical societies of six counties—Lenawee, Macomb, Monroe, Oakland, Washtenaw and

Wayne. Over one-third of the membership of the Michigan State Medical Society is embraced in this territory. The meeting consisted of morning, afternoon and evening sessions, the latter partaking of the nature of a banquet. The program represented addresses, papers, reports of cases, presentation of patients, and exhibits. Doctor Victor C. Vaughan, Dean of the medical department of the University of Michigan, delivered an address of Welcome; Doctor Leartus Connor, Councilor of the First District, an address on Organization; Doctor David Inglis, President of the Michigan State Medical Society, an address of Congratulation; and Doctor Andrew P. Biddle, Secretary of the Michigan State Medical Society, a Farewell address. The following papers were read and discussed, much interest being evoked: "The Diagnosis of Intestinal Obstruction," Theodore A. McGraw, M. D.; "Hematemesis Following the Operation for Appendicitis," Elmore E. Butterfield, M. D.; "The Value of Time and Natural Uterine Efforts in Parturition," Alvah N. Collins, M. D.; "Shortening of the Round Ligaments Within the Inguinal Canals Through a Single Suprapubic Transverse Incision, With or Without Opening the Peritoneal Cavity (with Lantern Slide Demonstration), Reuben Peterson, M. D.; "The Unsuspected Parasitic Origin of Many Dermatoses," William F. Breakey, M. D.; "Acute Abdominal Symptoms in Typhoid Fever from Inflammation of Mesenteric Lymph Glands, Simulating Intestinal Perforation and other Acute Abdominal Conditions: Two Illustrative Cases," R. S. Rowland, M. D.; "Borderland Cases of Insanity," Irwin H. Neff, M. D.; "Concerning the Pathology and Operative Treatment of Chronic Suppurative Otitis Media," R. Bishop Canfield, M. D.; "Modern Skiagraphic Technique," Vernon J. Willey, A. M.; "The Advisability of Eliminating the Terms Ménière's Disease and Ménière's Symptoms from the Otologic Nomenclature," Emil Amberg, M. D. The exhibits embraced a collection of medical classics; antique and obsolete surgical instruments; anatomical and pathological specimens; photographs of dermatologic disease-conditions; plaster-cast demonstration of abdominal and pelvic abnormalities; Roentgen ray demonstrations; lantern slide demonstration of vaccine lesions. The banquet was held at the Cook House. President Wessinger acted as toastmaster, and the following subjects were interestingly dealt with by the respective speakers: "Medicine in the City of the Straits," Doctor Albert E. Carrier; "The General Practitioner and the Surgeon," Doctor Reuben Peterson; "Pioneer Medical Teachers in Michigan," Doctor Victor C. Vaughan; "The Physician in Politics," Doctor Louis J. Hirschman; "The Scientist and the Practitioner," Doctor G. Carl Huber; "The Protection of the Practitioner," Doctor Frank B. Tibbals; "The First Councilor District Medical Society," Doctor William J. Herdman.

MINOR INTELLIGENCE.

HOUSTON, Texas, is to have a new charity hospital, George Herman of that city having provided a site and $20,000 toward the enterprise.

A BRITISH royal commission will shortly visit the United States for the purpose of investigating the methods employed in American hospitals for the insane.

THE Medical College of Indiana has recently become a part of Purdue University, and will henceforth be designated the School of Medicine of Purdue University.

THE detective department of New York City has adopted the thumb imprint system for the identification of criminals. An officer has been dispatched to Paris to study the French method of detection.

A NEW hospital for indigent negroes has been established at Cairo, Illinois. In connection with the institution a school has been opened for instruction of negro women in the rudiments of nursing.

YELLOW fever is epidemic in Havana, fifty cases and fourteen deaths having thus far been reported. The quarantine, which was established against certain United States ports because of the prevalence of the disease in this country, has consequently been raised.

THE American Association of Obstetricians and Gynecologists conducted its eighteenth annual session at Hotel Astor, New York City, on September 19, 20, and 21, 1905. The meeting was convened under the presidency of Doctor H. W. Longyear, of Detroit.

OWING to an outbreak of cerebrospinal meningitis, studies in the public schools of Dunkirk, New York, have been suspended. At present five children are under quarantine, and the school buildings will be subjected to a thorough disinfection before the resumption of work.

PUPILS evidencing symptoms of tuberculosis will henceforth be barred from the schools of Elizabeth, New Jersey, the Board of Education placing this affliction in the contagious disease category. While the validity of the ruling has been questioned by certain individuals, it will continue in effect until tested in the courts.

AN epidemic of cerebrospinal meningitis is threatened at the naval training station, Newport, Rhode Island. At present four apprentices are afflicted with the disease and one death has resulted. There are one thousand five hundred apprentices at the station and the authorities are exerting every precaution against a further spread of the disease.

GENERAL ISAAC J. WISTAR, who died recently, bequeathed the bulk of his estate to the Wistar Institute of Anatomy and Biology of the University of Pennsylvania, which institution he founded. To the anatomical museum of the Institute, he bequeathed his brain and right arm, the latter member being a desirable specimen of gunshot anchylosis.

AN engineer on the International and Great Northern Railroad, of Texas, who was recently awarded damages to the extent of $15,000 for injuries received in a wreck, has been confronted with a counter suit instituted by the road for $40,000, the contention being that the engineer was directly responsible for the collision in which he was incapacitated.

IT is reported that the president has appointed a commission consisting of Surgeon-General O'Reilly, of the Army; Surgeon-General Rixey, of the Navy; and Surgeon-General Wyman, of the Marine Hospital Service, to investigate the hygienic condition of the government offices and workshops, with a view to the suppression of tuberculosis.

DOCTOR W. W. FORD, of the bacteriological department of Johns Hopkins University, is reported to have produced an antitoxin for mushroom poisoning. The agent is administered in the usual way, increasing doses being injected until the desired effect is produced. The toxin has not yet been tried on man, but in animal treatment the results obtained have been excellent.

IN connection with a lecture recently delivered by Doctor Bulkley at the New York Skin and Cancer Hospital, Lapowski demonstrated several microscopic specimens of the Spirochæta pallida, and incidentally reviewed the work that has been conducted by various investigators to establish relationship between the organism and syphilis. The doctor's resume was at once interesting and instructive.

THE estimated number of lepers in the United States is three hundred. Of these one hundred fifty-five are segregated in Louisiana. California and Florida each have twenty-four cases, and Minnesota is fourth in line with twenty. North Dakota has sixteen cases, and Illinois, Mississippi, and Missouri five each. The other cases are distributed over thirteen states and territories.

SINCE the abandonment of Cuba to native sanitary authorities, the hygienic standard instituted by American officials has sadly depreciated, owing largely to laxity of the government in enforcing the law. The situation has at last reached a climax, and ordinances in the municipalities will henceforth compel property owners to comply with the mandates of the Government Sanitation Board.

STATISTICS demonstrate that during the collegiate year 1904-5, twenty-six thousand one hundred forty-seven students were engaged in the study of medicine in the United States, one thousand seventy-three of which number were women. Five thousand six hundred six received diplomas. While these figures are sufficiently large to startle the individual who continually bemoans the already overcrowded condition of the profession, it may be of interest to note that the registration for the year mentioned was decidedly smaller than that for the preceding year, when over twenty-eight thousand students were enrolled.

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